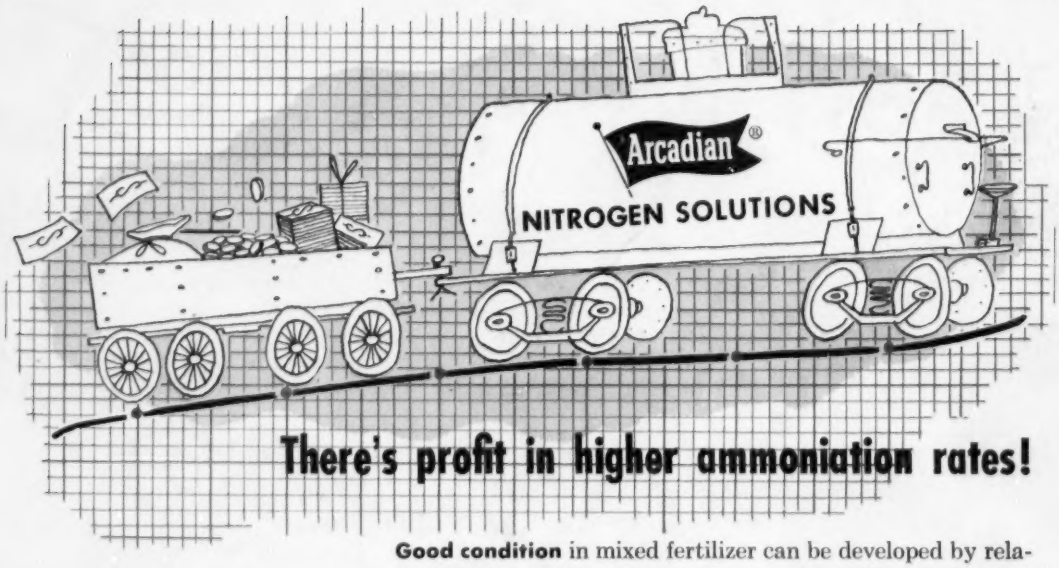
COMMERCIAL FERTILIZER

CONSOLIDATED WITH THE FERTILIZER GREEN BOOK



There's profit in higher ammoniation rates!

Good condition in mixed fertilizer can be developed by relatively high ammoniation rates using NITRANA® or URANA* Solutions. They provide an economical source of desirable nitrate, ammonia, and water-soluble organic urea nitrogen, besides serving as excellent curing media.

Thorough mixing of solutions with superphosphate is important to obtain best physical condition—with all of the superphosphate taking up its fair share of neutralizing ammonia. Nitrogen Division technical service representatives have a thorough acquaintance with the essentials of ammoniation procedure under a wide range of plant conditions. Their help is available without obligation. *Trade-Mark

Arcadian

PRODUCTS FOR PROFITABLE FARMING

Nitrogen Solutions (NITRANA® and URANA*)

AMERICAN Nitrate of Soda

A-N-L® Nitrogen Fertilizer

Urea Products

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NITROGEN DIVISION
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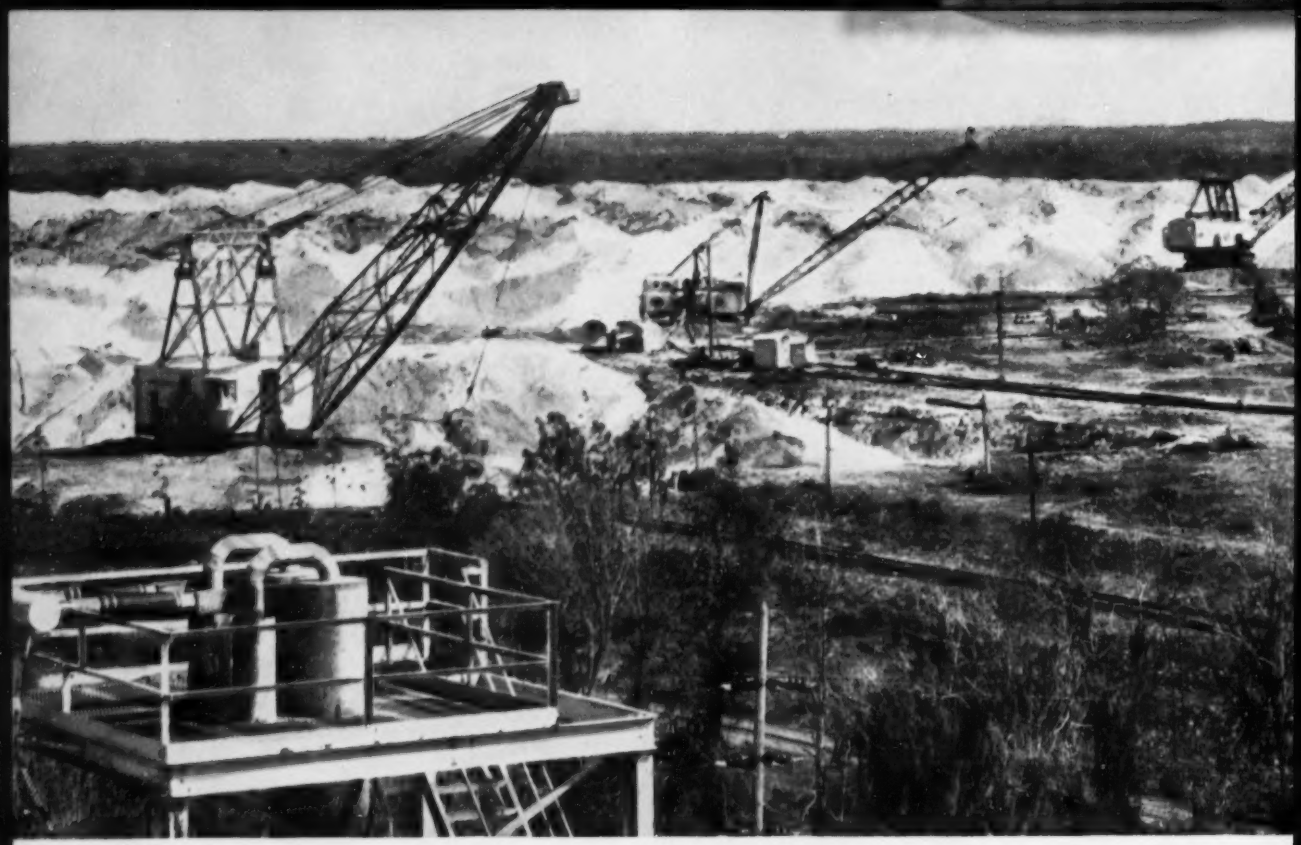
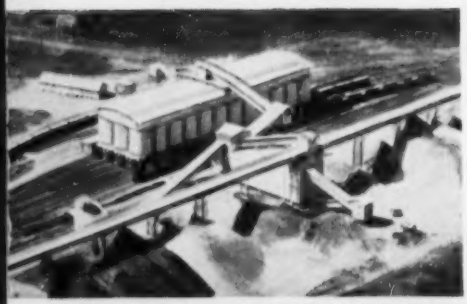


Three of the A.A.C. Co's electrically-operated draglines at work at our phosphate mines in Central Florida. Bucket capacities range from 9½ to 17 cubic yards. The 17-yard draglines with their 175-foot booms each weigh more than a million and a half pounds and can move 35,000 tons of material in 24 hours. From these rock deposits flow a continuous stream of high quality phosphate rock, assuring a dependable source of supply of AA QUALITY phosphorus products, see list below.

AA Quality...

for over 85 years a symbol of quality and reliability



From the air—wet rock storage and drying plant, with dry rock storage silos in background. These silos, 29 in number, have a total capacity of 40,000 tons of dried rock. Under the silos are four runways where 40 railroad cars can be loaded at a time.

principal AA QUALITY products

All grades of Florida Pebble Phosphate Rock
AA QUALITY Ground Phosphate Rock
All grades of Complete Fertilizers **Superphosphate**
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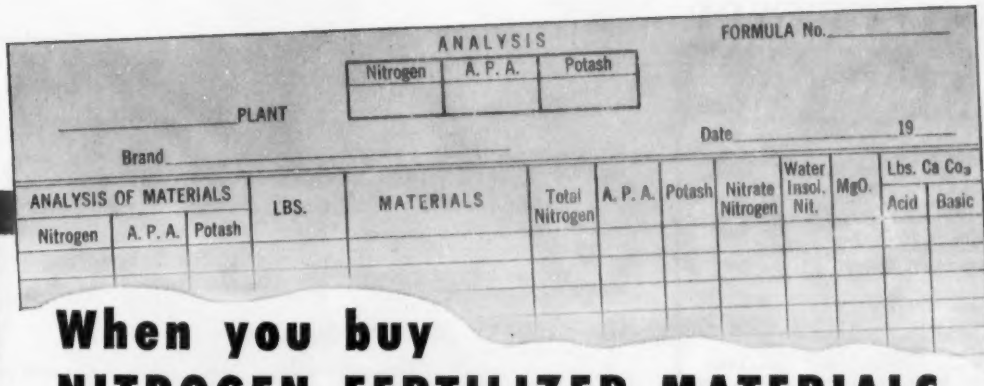

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"Controlled Quality"

and what it means to you

When you visit El Dorado or New Orleans you will want to inspect Lion's giant chemical plants where Lion Nitrogen Fertilizer materials are manufactured. You'll be impressed by the painstaking efforts to assure highest quality products... reaching you in first-class condition. This is what we mean by "Controlled Quality"—which can mean a great deal to you.

"Controlled Quality" is your assurance that you will be formulating with only top grade nitrogen materials... that you will be selling *quality products.*

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COMMERCIAL FERTILIZER

ESTABLISHED 1910

October, 1954

Volume 89 No. 4

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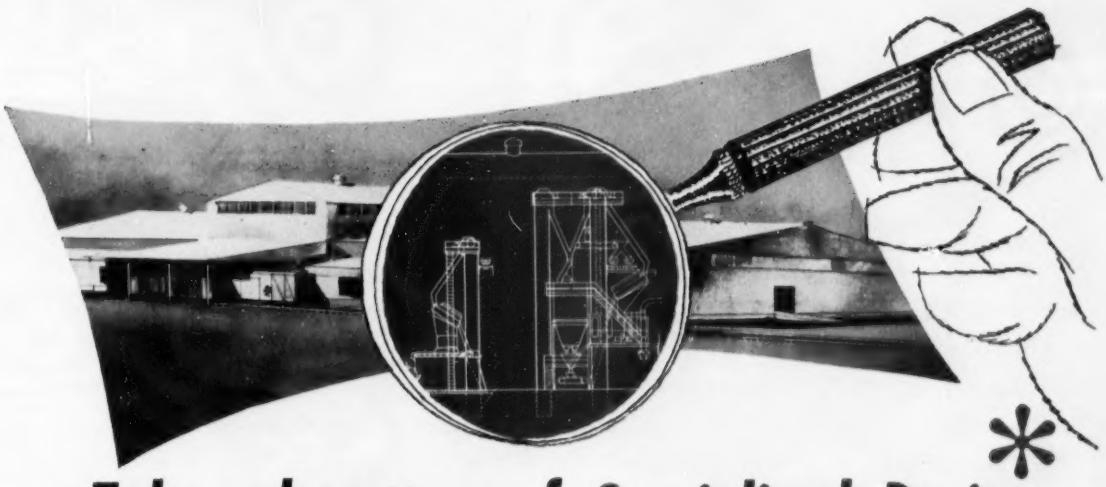

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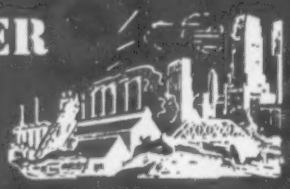

By Vernon Mount

TWO YEARS OF EISENHOWER, dispassionately approached from the viewpoint of business, look good. Conditions favorable to greater economic activity have been created...an atmosphere favorable to corporate financing...a stable price level, especially this Spring and Summer.

INCOME IS HIGH. Personal income after taxes is at the highest yearly rate in history. Hourly wages are at a record high, with weekly earnings only a little below 1953. The cost of living is hovering around the static mark. Personal savings have reached a peace time peak.

AMATEURS NOW PRO'S. The heads of the Administration, who went into office as rank amateurs in government (after 20 years of Democratic rule) have learned their trade, and how to apply their civilian expertness to the mechanics of government.

UPTURN HERE THOUGH SPOTTY. The overall picture is not quite back to what we have learned to call normal. Spots are fine. Spots are bad. In some cases the weather is entirely to blame for slow recovery. But the economy is sound and gathering force for another upward movement... just around the corner.

Yours faithfully,

Vernon Mount

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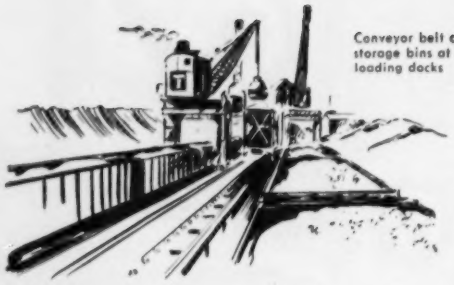

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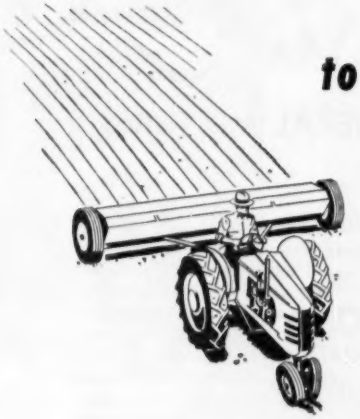

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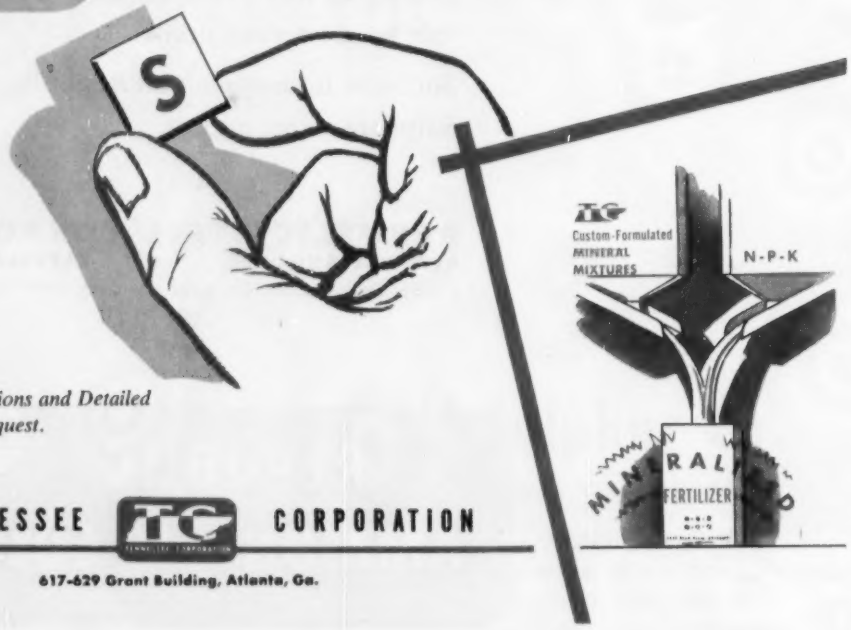

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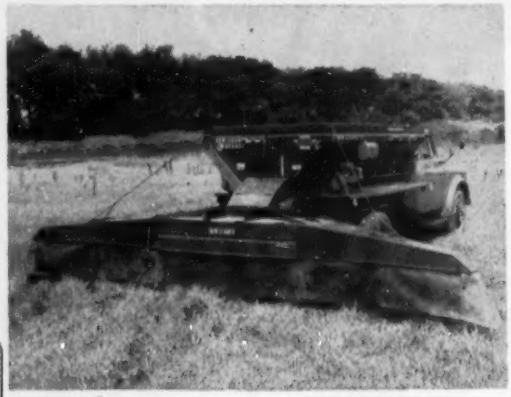

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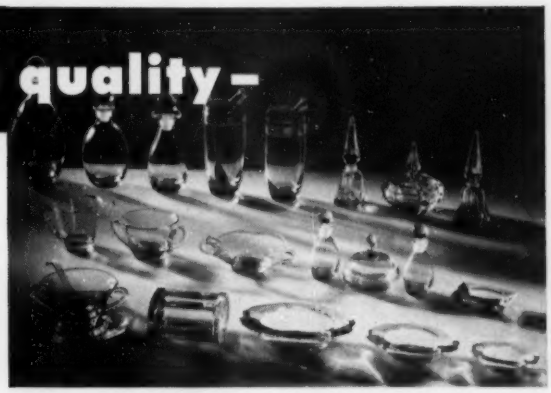

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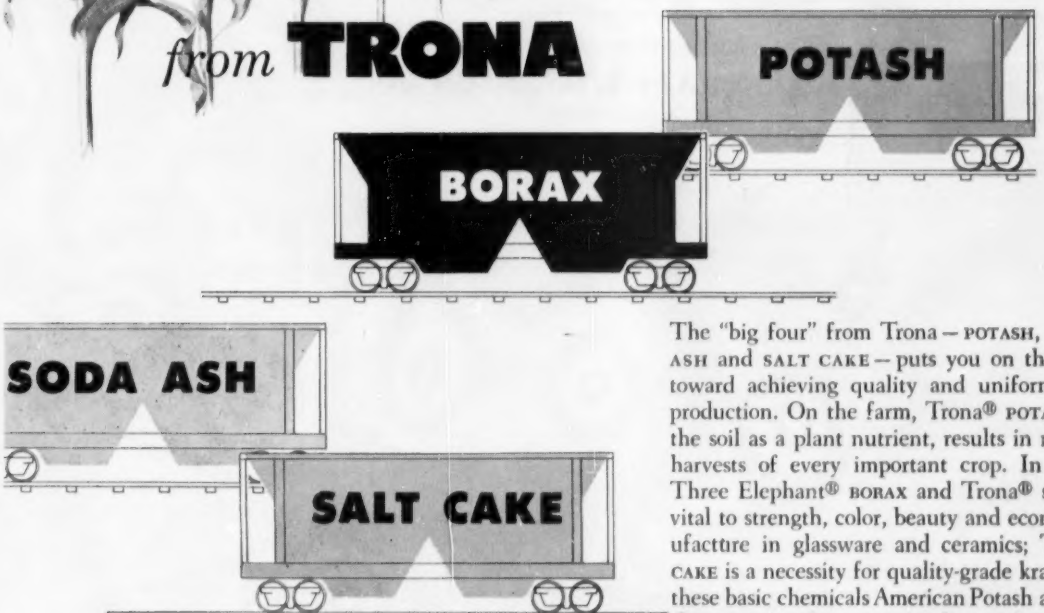

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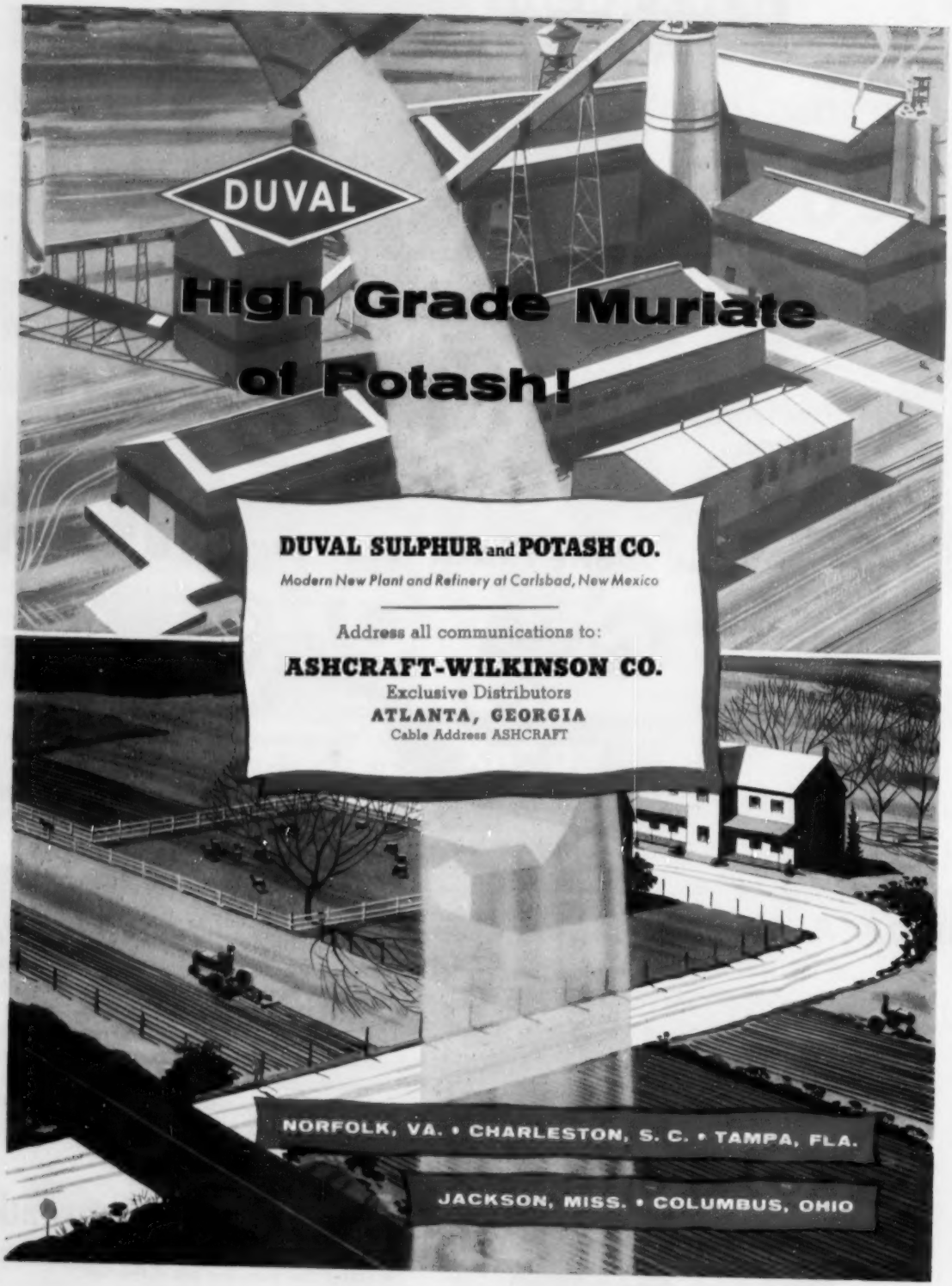
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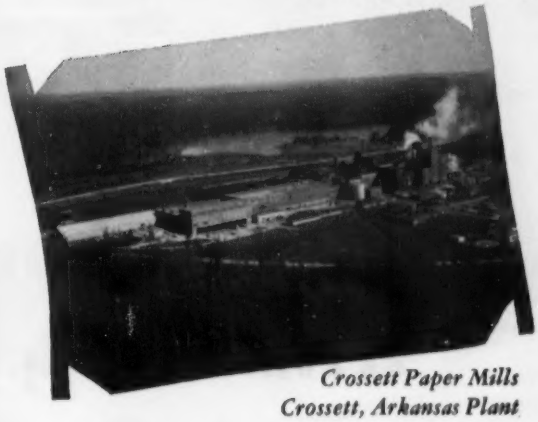

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Crossett, Arkansas Plant

Camp Manufacturing Co.
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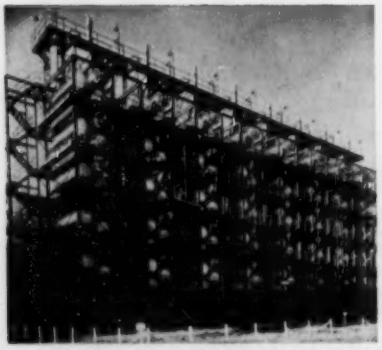
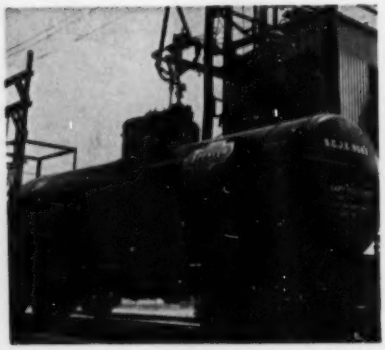
H. H. (Herb) Boltin, is production manager. Plant supplies fertilizer for 35,000 acres of citrus.

Pasco Packing Co.

...Another Spensol User



Equipment like this is used by Spencer in producing SPENSOL (Spencer Nitrogen Solutions) for some of America's best known mixers.



On time deliveries of SPENSOL solutions have helped to build Spencer's reputation for dependable service to fertilizer mixers everywhere.

Multi-nozzle solution injector, giving better ammoniation of mixed fertilizer was invented by H. B. Davis of Spencer Chemical Company.

SPENCER

SPENCER CHEMICAL COMPANY, Dwight Bldg., Kansas City 5, Mo. District Sales Offices: Atlanta, Ga.; Chicago, Ill.; Memphis, Tenn; Works: Pittsburg, Kans.; Henderson, Ky.; Chicago, Ill.; Vicksburg, Miss.; Orange, Texas (under construction).

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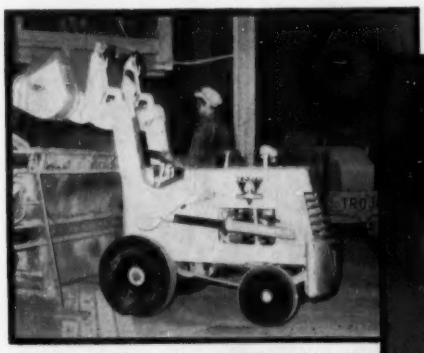
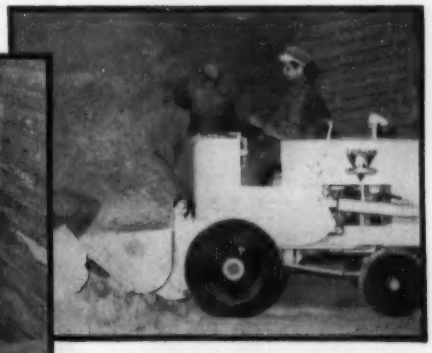
MAN-HOUR SAVERS!

Production moves FAST with the multi-purpose Trojan Loadster Model LA-40. The LA-40 handles ALL kinds of bulk material in ALL kinds of plants. Whether loading or unloading, the LA-40 delivers the goods fast, using a minimum of working space (turns in a 6'6" radius). Model LA-40 travels fast too, with its low load carrying position, giving you "more tonnage per day."



Here's complete safety with Model LA-40 dumping into hopper.

Model LA-40 Unloading Boxcar with room to spare.



Model LA-40 Digging cured material for bagging.

exclusive BIG 3 features:

1 Reverse curve arms* for safety!

Even when the bucket is fully raised, constant 360° vision and complete safety for your operator is maintained.

(*U.S. Pat. 2,645,369)

2 Low load carrying position!

A low load is a safe load for stability and speed; especially when handling fertilizer and other bulk material. Your operator will like Trojan's "wheel level" carrying position.

3 Independent bucket action!

Just flipping the bucket closed, this operator gets a full load everytime. Trojan's independent bucket action pries loose hard packed material, too.

There's one in the Trojan Loadster Line to fit your need—
Model LA-40 — Model LMS-75 — Model LC-100 — Model LC-100-B

CONTRACTORS MACHINERY CO., INC. • BATAVIA, NEW YORK TROJAN

Mail this coupon today for full details on Model LA-40.

NAME _____

TITLE _____ COMPANY _____

ADDRESS _____

CITY _____ STATE _____

DEPENDABLE QUALITY

THE dependable quality of papers and materials used in Hammond Multi-Walls . . . combined with the most modern and efficient production methods and equipment . . . assures you of the finest paper bags on the market.

Consult the Hammond man near you for Hammond Multi-Walls that meet all shipping requirements of your products. You can rely on him for accuracy and promptness in filling your needs.

Hammond Multi-Walls

For Multi-Wall bags, "make it a habit to depend on Hammond."

HAMMOND BAG & PAPER COMPANY

General Offices: Wellsburg, W. Va.
Plants in Wellsburg, W. Va., Pine Bluff, Ark., and Charlotte, N. C.

Representatives in the following cities: NEW YORK, N. Y. ● CHICAGO, ILL. ● MINNEAPOLIS, MINN. ● KANSAS CITY, MO. CLEVELAND, OHIO ● ATLANTA, GA. ● WASHINGTON, D. C. ● DALLAS, TEXAS ● CHARLOTTE, N. C. ● LIGONIER, PA ● BLUEFIELD, VA.

RICHARD E. BENNETT
—HIS STATE IS 100%

Every fertilizer plant in Nebraska is a member of the National Safety Council, and pictured here is the man responsible. He is Richard E. Bennett, president of Farm Fertilizers, Inc., Omaha and part of his success, in addition to his spirit of go-get-'em, is the fact that his opinion carries great weight in his State. So Nebraska is the first State in the Union to reach the Fertilizer Section goal of 100% membership.

Dick Bennett has a background of big-time operation, as might well be imagined from his performance for Safety. During most of his business life he has been interested in more than one business.

For forty-two years he was an officer in the Smith-Dorsey Company of Lincoln, Nebraska who are pharmaceutical manufacturers. During fifteen years of that time he was president of the Corporation. For about twenty-five years he was president of Western Mineral Products Company whose headquarters are in Omaha with plants in Omaha, Minneapolis and Milwaukee.

At the present time, in addition to being president of Farm Fertilizers, Inc., he is president of Bennett Chemical Company of Denver, Colorado; vice-president of Wilkinson Manufacturing Company, Omaha; president of Bennett Products Manufacturing Company, Palo Alto, California; and vice president of Frito Midwest Company, Omaha, Nebraska.

Mr. Bennett is also a director in National Fertilizer Association as well as a director of the Middle West Soil Improvement Committee.

It Seems to Me

by BRUCE MORAN

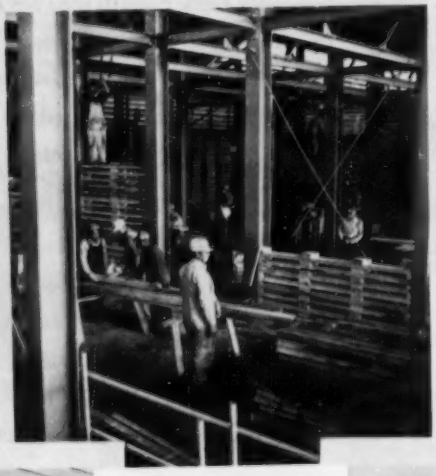
As we write this, Nature's capriciousness is being demonstrated again with flash-floods for cities, and continued drought for the land that so badly needs it. But rainfall averages up over the years, and we can hope that the Winter snows will condition the ground for a healthy spring planting . . . and that the normal cycle will be restored.

The bad year of 1954 will leave the farmer mighty cautious how he spends the money he has left, so it is pertinent today to remind ourselves, our salesmen and our customers that since 1935 fertilizer prices, in terms of plant food content, have advanced only 13%, while the prices of all items farmers buy have advanced 125% in the same period. In other words, we have a bargain price in contrast to other commodities.

NFA has produced a nice little "Did you know?" sticker, from which the above data was extracted. On your letterhead it will help tell your customers; on their letterhead it will help tell the farmer. It's worth using, and mighty appropriate right now.

INDUSTRY CALENDAR

Date	Organization	Place	City	State
Nov. 3-4	S. C. Fertilizer	Clemson College	Clemson	S. C.
Nov. 8-12	Crop, Soil	St. Paul Hotel	St. Paul	Minn.
Nov. 10-12	NFA	Hollywood Beach Hotel	Hollywood	Fla.
Nov. 15-16	CFA	del Coronado Hotel	Coronado	Calif.
Nov. 19	S. C. Safety	Cleveland Hotel	Spartanburg	S. C.
Dec. 2-3	Cotton Insect	Adolphus	Dallas	Texas
Dec. 5-8	Ammonia Institute	Jung	New Orleans	La.
Dec. 7	Fertz. Safety Exec.	Spencer Chemical	Memphis	Tenn.
		— 1955 —		
Jan. 17-19	Sou. Weed Conference	Hotel Sorono	St. Petersburg	Fla.
Feb. 27-28	Southern Safety		New Orleans	La.



M F A

Missouri's New Farm-Owned

HIGH-ANALYSIS, GRANULATING PLANT

Missouri Farmers Association's new fertilizer plant at Joplin, Missouri, is a high analysis granulating unit. The principal chemical compounds manufactured are phosphoric acid and ammonium phosphates. The phosphoric acid is produced by the wet process—the acidulation of phosphate rock with sulfuric acid. The plant has a capacity of 70,000 tons of complete high analysis fertilizer.

KEY TO PICTURES

1. The Missouri Farmers Association's new fertilizer plant at Joplin, Missouri is nearing completion. In left foreground are offices, the long structure is for bulk fertilizer storage and beyond it are mixing buildings and silos for rock storage. The area on past the dam that runs diagonally across the top of the picture will be the gypsum deposit area. 2. Another steel beam rises to its place in the massive mixing and blending building as helmeted construction boss looks on. 3. Web-like steel frame of the mixing and blending building will house complicated machinery necessary for the production of high analysis plant foods. The construction of this plant is the culmination of many months of study and research. This farmer-owned plant is one of the two of its kind in North America. 4. From rock phosphate elevators may be seen sulphuric acid, anhydrous ammonia and oil storage tanks. Two railroads serve the plant, the Frisco's tracks come in from the west and the MKT, from the east. 5. Rain was falling when these pictures were taken so the working crew was inside building wooden bulkheads in the storage building to separate different grades of plant foods. Storage will hold 15,000 tons. 6. Gypsum is a byproduct here. In the background is the vast disposal area where this gypsum will be allowed to settle out of processing water. It consists of sixty-nine acres—at designed production rate, this would hold all disposal for 15 years. 7. A vast array of machinery stands waiting for installation in the new unit. This is at the site of shipping department where bagged or bulk goods can be loaded on railroad cars or trucks. 8. From Florida will come rock phosphate to fill these massive silos. Sulphuric acid from Eagle-Picher will be used to treat the rock for phosphoric acid which is in turn treated with anhydrous ammonia to make high analysis ammonium phosphate fertilizers. 9. The American Flag flies from a pole at the site of the new Joplin Plant. Beyond it lies the plant structure which will soon be capable of producing more than 7,000 tons of high analysis plant foods per year for its owners, farmers of Missouri. 10. Carpenters build forms for concrete structure which will be a part of the shipping and bagging part of the operation. Past them can be seen one of the covered car-unloading areas. 11. Waste gases from Eagle-Picher's smelter, seen in the distance, will provide the sulfuric acid which is vital in the manufacture of high analysis plant foods. A pipeline will transport the acid from that plant, in Kansas, to the Joplin Plant, a portion of which is shown in the foreground, in Missouri.

The Joplin plant will begin operations in November. Construction started in August 1953. **Merritt-Chapman & Scott** of New York City are doing the building. The architect-engineers for the entire project is the **Dorr Company** of Stamford, Connecticut.

The Joplin plant consists of thirteen sections: Rock unloading and grinding, phosphoric acid production, fertilizer production, product storage, bagging and shipping, yards, office and main laboratory, change house, shop, electrical sub-station, water supply, water treatment and gypsum disposal.

The principal raw materials are anhydrous ammonia from plants such as the Jayhawk Works of **Spencer Chemical** located five miles northwest; phosphate rock from Florida; potash from New Mexico; and sulphuric acid from the **Eagle-Picher** Company located a few hundred yards away. The sulfuric acid is piped from Eagle-Picher to the Joplin Plant through 4,000 feet of pipe.

The rock unloading and grinding section consists of the necessary conveyors; four silos constructed of glazed tile, each 24′ x 62′ high with a total capacity of the four silos of 3,000 tons; a 66″ **Raymond** High Side Roller Mill for grinding dry raw phosphate rock, both concentrates and pebble, at a capacity of nineteen tons per hour to a fineness of 60% passing 200 mesh; and a **Fuller-Kinyon** dust pump moving the phosphate rock to the phosphoric acid and fertilizer production sections.

The ground phosphate rock and sulphuric acid are reacted in rubber lined vessels in the phosphoric acid production section, and the reaction products are phosphoric acid and gypsum. The design is the **Dorrco** strong acid process. The resulting slurry is pumped to filters where the gypsum is continuously separated from the phosphoric acid by a vacuum filtration, and the gypsum is washed continuously and countercurrently. The filters are known as traveling pan filters, and were constructed by **Oliver United Filters, Inc.,** according to Dorr specifications. This is a new type of filter designed by **M. Giorgini,** Manager of a Dorr associated company at Milan, Italy. Three filters of 129 square foot each of effective filtration area are employed. The filters are located at a sufficient height so that barometric legs are used. The first filtrate is pumped to a storage where it is pumped direct from there to the fertilizer manufacturing section or to the Swenson evaporators where the phosphoric acid is either concentrated before using in the fertilizer production section or concentrated for shipment. Two single effect vacuum evaporators are used for the continuous concentration of acid from 32% P_2O_5 to various concentrations up to 55% P_2O_5. The use of the **Weber Recirculation System** minimizes the difficulty connected with the precipitation of calcium sulfate and various fluosilicates on the sides of the flash chamber and the tubes of the heat body. The evaporators will operate at a reduced pressure of 2.5″ Hg absolute. The steam to the heat exchanger will be at 10-20 Psig. The two stage steam jet air ejectors will operate at 100 Psig. The acids handled in this section are extremely corrosive. The materials of construction are rubber, acid proof brick, lead, Type 316 and 317 stainless steel and special plastics.

The main equipment of the fertilizer production section is the reaction agitators where anhydrous ammonia is added to phosphoric

acid, a granulating unit, large swing hammer pulverizers, a package water tube boiler, and a large drier. Fuel for the plant is natural gas, with light fuel oil as a stand-by. It is in this section that the various complete grades are manufactured using phosphoric acid, anhydrous ammonia and some sulfuric acid.

The product is carried by overhead covered belt conveyor to the product storage building where the material is transferred to a reversible shuttle conveyor for discharge to any of the fifteen bays. In addition to these fifteen product storage bays is a bay for the storage of potash. The capacity for product storage is 15,000 tons. The bookshelf partitions are constructed of 3" native oak. Transfer of the product from storage will be by scoop trucks to two continuous bucket elevators for transfer to the bagging and shipping building by over-head covered belt conveyor.

The bulk product is moved from storage to the bagging and shipping building across the plant railroad trackage. Two **St. Regis** valve packers will bag the product in 80# bags. Three sides of this building have a canopied dock. One side of the building is reserved for box car loading and the opposite side and one end is reserved for truck loading. In this building is a humidified room for empty bag storage. The remainder of the building, except for the bagging machine area is to be used for storage of approximately 500 tons of filled bags. It is planned to use fork lift trucks as conveyors for the bagged product. The plant personnel expect to be able to give very quick service in filling orders. The lay-out for doing this seems to be ideal with no interference between railroad cars and trucks.

Facilities for the workmen throughout the plant are very good. Pull chain safety water showers and eye wash fountains are strategically located throughout the plant. The change house with its lockers is very neat, and the services are ample which should help to make working conditions very good.

In the administration building is located the plant office and main laboratory. A control laboratory and sample preparations room is located in one of the main manufacturing buildings.

The service center consists of a large building for warehouse storage, machine shop and garage and a small separate building for paint and lubricating stores.

The water supply comes from two deep wells. A water treatment plant is provided for purification of water, cooling and reuse.

The building construction is principally steel and corrugated transite. A green tinted translucent plastic siding is used liberally in the side walls and roofs of the buildings to improve working conditions.

ALABAMA

Baldwin Liquid Fertilizer Co., Inc. has been incorporated at Bay Minetta.

ARIZONA

Sun Valley Fertilizer Company, Phoenix, is in process of incorporation. Incorporators are listed as **Thomas P. Glenn, Lucille A. Glenn, H. Walker Harrison, Eunice W. Harrison.**

ARKANSAS

Tri-State Chemical, Springdale, opened for business middle of last month, turning out 200 weekly tons of Gro-Mor. They will serve an area of northwest Arkansas and contiguous areas of Oklahoma and Missouri.

CALIFORNIA

Brea Chemicals should by the time you read this have in operation at Brea an ammonium phosphate operation, blending their own aqua ammonia with phosphoric from Monsanto. By early 1955 they expect to have completed two more such operations, at Brawley and Fresno. This will bring up to 15 the distribution points which range from the Northwest to Mexico to Hawaii, with a total storage capacity at stations now in operation reaching more than 20,000,000 gallons of 24% solution.

* * *

American Potash and Chemical has sold to its employees at Trona all houses except their quarters for unmarried workers, and turned over the public utilities to the county tax district involved. AP&C is said to be bidding for control of **Western Electrochemical.**

* * *

R. D. Wirdolph applied for a variance permit for a fertilizer plant at Santa Ana, but was blocked at the first meeting by a petition of residents who objected to the lowering of property values which they claimed would follow. The Orange County Planning Commission set the decision over for future study.

COLORADO

The Anhydrous Ammonia Co., Grand Junction, has established a 15,000 gallon storage at Gunnison.

FLORIDA

Neco at Fort Pierce used a thousand pounds of fertilizer to good public relations effect recently. They

in the bag

Sul-Po-Mag may make the difference between profit and loss for the farmer!

on the bag

Mg (magnesium) is the sign that farmers look for —it stands for a better balanced fertilizer!

added sales

with Sul-Po-Mag

When you use Sul-Po-Mag, farmers will insist on your brand year after year!

Sul-Po-Mag, produced exclusively by the Potash Division, supplies a properly balanced combination of sulfate of potash—and sulfate of magnesium. Soluble magnesium is so extensively used in magnesium-deficient crop-growing areas, it is often called the fourth element in the fertilizer bag.

The Potash Division mines and refines at Carlsbad for fertilizer manufacturers: Muriate of Potash, Sulfate of Potash and Sul-Po-Mag.

Sul·Po·Mag

Water-Soluble Double Sulfate of Potash-Magnesia
($K_2SO_4 \cdot 2MgSO_4$) 22% K_2O—18% MgO

potash division

INTERNATIONAL MINERALS & CHEMICAL CORPORATION · GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6

Commonwealth Fertilizer Company, Russellville, Kentucky, have sent us this picture of their plant, showing the new acidulation unit at the far right end of the building. This is a continuous type, with capacity of 20 hourly tons of superphosphate, designed by W. S. Tyler and Son, Sulphur Springs, Texas. The whole installation added 15,000 square feet of floor space to the plant. Commonwealth is owned by Nat H. Love—in charge of purchasing and production—and Joe Hicks, in charge of sales. It was founded in 1949.

presented it to the local garden club's beautification committee for the benefit of the library lawn . . . and got excellent newspaper publicity. Not so good was the fire they had about the same time, but damage was slight.

• • •

Lyons Fertilizer, Tampa, recently had a burglary. They stole a billing machine and the cash drawer, but little or no money was missing.

• • •

American Cyanamid has bought a thousand acre phosphate tract between Bartow and Fort Mead for a price above $700,000, to increase their already extensive phosphate holdings in that section.

IDAHO

Monsanto are about in operation with their second elemental phosphorous furnace at Soda Springs, a $1,000,000 unit which doubles their output there.

ILLINOIS

Scott County Service, Bluffs, are building a new bulkwarehouse to handle fertilizer materials, and will have a capacity of 525 tons of bulk ingredients. **Howard Hurrelbrink** is president.

• • •

Steve Turner, Pontiac, is having another of those big farm meetings of his, this time with **Umbaugh Chemical** as co-sponsor. His headliner is **Everett Mitchell,** "dean of farm radio and TC commentators" who will ride herd over a panel composed of **Dr. E. H. Tyner,** chief of soils research U of Illinois; **Dr. K. C. Berger,** who holds the same post at U of Wisconsin; **Dr. Howard Lathrope,** now with **Nitrogen Division,** who was on last year's program as Purdue University agronomist. As usual the theme is 100 bushels of corn to the acre.

Steve has planned a 3-day open house, with favors and tours of his plant, to follow the meeting.

IOWA

American Agricultural Chemical will build at Humboldt a plant engineered to produce 60,000 annual tons of fertilizer, to be ready for operation by next Summer.

• • •

Super Crop Plant Foods is completing in Ottumwa a new plant to produce granular fertilizer. The plant is owned by **J. L., David** and **Don Carpenter. Fertilizer Engineering & Equipment Company,** Green Bay, Wisconsin, designed and furnished all equipment.

• • •

Spencer Plant Foods, Spencer, went into construction last month, all engineering and machinery to be furnished by **Blue Valley Equipment, Manufacturing and Engineering Co.,** including a Blue Valley granulator. Owners are local business men and some officials of **Blue Valley Fertilizer Co.,** Marysville, Kans., with **Fred Sherer** as president. **W. P. Glaspey** is president of Blue Valley. Operations will start November 1, serving Western Iowa and parts of Minnesota, South Dakota and Nebraska.

INDIANA

Standard Oil (Indiana) and **Sinclair Refining** Sept. 22 jointly announced plans for one of the Midwest's largest ammonia plants, to be built in Hammond, near Standard's Whiting refinery and Sinclair's East Chicago refinery. Both refineries will feed by-product hydrogen and other gases into the plant by pipeline. The plant is planned to produce 300 daily tons of anhydrous ammonia, and will be the largest in the country producing anhydrous ammonia from by-product hydrogen. It will also be able to produce solutions of ammonia and ammonium nitrate.

A new company will be formed to own the plant. Standard, which will supervise construction and later operate the plant, under contract with the new company, is obtaining bids from contractors. Site preparation is planned to start late this fall, with the beginning of construction tentatively planned for next spring. The target date for completion of construction and initial operation is early in 1956.

Products of the plant will be marketed chiefly in the midwest area. Standard and Sinclair will each market their portion of the products separately. Shipments out of the plant will be made by tank truck and tank car.

KENTUCKY

T. N. Peck & Associates, San Francisco, are to build a $3,000,000 plant near Burnside, which is scheduled for completion late in the Spring. **T. N. Peck,** president, calls it "a glorified sawmill" which will produce charcoal and reclaim the waste gases for conversion into furfural.

MARYLAND

Shea Chemical, Baltimore, has bought an 80-acre tract for phosphate rock mining facilities. No immediate construction is planned. This is Shea's first phosphate land purchase.

MISSISSIPPI

Mississippi Chemical plant in Yazoo City will increase the ammonia production capacity to a total of 290 tons per day. All of the increased output will be used as fertilizer. A part of it is to be distributed as anhydrous ammonia, and a part is to be converted to ammonium nitrate.

The Girdler Company, Louisville, Ky.—a division of the National Cylinder Gas Company—is performing the design, engineering and construction services for additional synthesis gas generating and purification facilities. Girdler also engineered and built the original plant, which went on stream in 1951.

In the original synthesis gas plant, 120 tons per day of ammonia were produced by the catalytic steam re-

forming of natural gas in two multi-tube furnaces, followed by single stage carbon monoxide conversion and carbon dioxide removal by monoethanolamine scrubbing in a Girbotol unit. The gas was then compressed to 1000 atmospheres prior to high pressure methanation and ammonia synthesis.

The first addition to the plant, which was placed in operation in January, 1954, increased the capacity of the facilities from 120 to 195 tons per day. It included the installation of a third reformer furnace and necessary gas purification equipment. Air reforming is employed in this furnace to introduce the necessary nitrogen into the system, instead of the flue gases or nitric acid plant tail gases used in the original plant. The furnace is charged with the recently developed Girdler G-29 nickel base steam-hydrocarbon reforming catalyst. The new purification train was designed for ultimate capacity which can be attained with the addition of another furnace.

In the second expansion project, a unique scheme is being employed to increase the capacity of the existing plant. A second stage of carbon monoxide conversion and carbon dioxide removal followed by a single stage low pressure (10 psig) methanation step is to be added. The original high pressure (1000 atmospheres) methanation step is to be eliminated and the methanator vessel modified to an ammonia synthesis converter. By using this scheme, additional capacity will be obtained for an absolute minimum of capital expenditure. It is expected that this phase of the construction program will be completed shortly.

The third expansion project involves the addition of a fourth multi-tube reformer furnace, a duplicate of that furnished for the first expansion project. This additional furnace, expected to be ready for operation in December, will boost the capacity of the plant to 290 tons per day and bring the second purification and ammonia synthesis train up to full capacity. Additional synthesis gas compressors are being added to the plant as required for the various expansion steps.

Since the original plant layout made by Girdler was designed to accommodate expansion of facilities, very little production time has been lost in executing these three major expansion projects. All tie-in points were provided originally and connections have been or will be made during regularly scheduled shutdown periods.

* * *

Delta Chemical and Fertilizer Co., Inc. has been incorporated at Greenville with capital stock of $100,000.

MISSOURI

Boonville Mill & Grain Co., Boonville, has added fertilizer mixing facilities to its operation.

IOWA

American Agricultural Chemical Company, New York, announces plans for the construction of a large, modern fertilizer plant on a 56-acre site located three miles north of Humboldt.

The new plant, one of 28 A.A.C. plants serving principal agricultural areas in eastern, southern and midwestern U.S., Canada and Cuba, will have productive capacity of approximately 60,000 annual tons of fertilizer. It will be operated by local people.

The plant site has now been acquired by the company, and with engineering plans already completed, ground will shortly be broken and work on the foundations started. Construction will be pushed as rapidly as possible before cold weather, in the expectation that the plant will be completed and in operation by early next Summer. The new plant will be one of the most modern in the country, embodying the latest advances in layout and manufacturing equipment for the production of acid, superphosphate, and mixed fertilizers in the various grades used in this area.

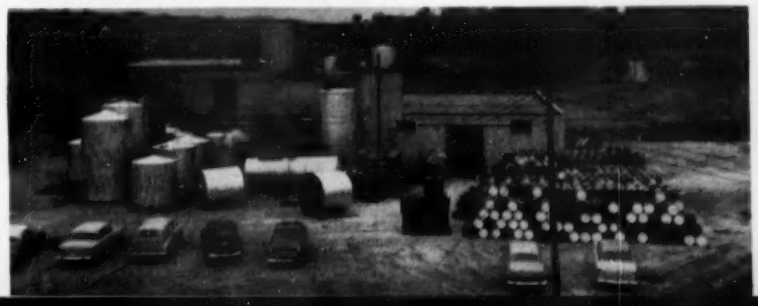
An outstanding feature of the new plant will be the specially-designed loading facilities for both bagged and bulk fertilizers. For those who make use of bulk spreader truck service, special bulk loading facilities will make it possible to load under cover. Separate loading equipment for bagged goods will include valve packer type bagging machines and conveyor system for loading directly into trucks.

The new plant will also have complete facilities for grinding, storing and loading finely ground rock, which will be delivered to the plant in unground form in covered hopper-bottom cars direct from the A.A.C. Co. phosphate mines in Florida.

With its extensive mining operations in Florida, the A.A.C. Co. is a leading miner and refiner of pebble phosphate rock, from which it produces superphosphate, a basic fertilizer itself and also the principal ingredient in mixed fertilizers. From phosphate rock the A.A.C. Co. also produces pure elemental phosphorus by electro-thermal process developed by the Company. Elemental phosphorus, in addition to various industrial uses, is used in the production of phosphoric acid, "the chemical of a thousand uses." The A.A.C. Co. also produces a wide range of other industrial chemicals, most of which are derived in one way or another from phosphate rock, one of the most basic and versatile of materials serving the needs of man.

The products of the Humboldt plant will be marketed under the brand names 18% Normal Superphosphate, Agrico and AA Quality Mixed Fertilizers, and AA Quality Finely-Ground Phosphate Rock.

A substantial addition will be built to the 2,4-D weed killer plant facilities of the Thompson-Hayward Chemical Co., Kansas City, Robert S. Thompson, vice president and general manager of the Company, has announced. The addition will consist of a new warehouse adjoining present manufacturing and formulations facilities at the company's new plant in Kansas City, Kansas, shown below.
This will expand the firm's basic 2, 4-D acid manufacturing and herbicide formulation facilities which were completed last year, giving additional capacity to this part of the company's operations.
It is expected that construction will be completed by early December. This addition will provide for adequate manufacturing and warehouse facilities to meet the growing demand for the company's 2, 4-D and related weed and brush killer products.



Through its service office, to be located at the plant, the A.A.C. Co. will make available to farmers its complete agronomic service which is rendered without charge to the farmer, by experienced agronomists.

* * *

Bell Brand Fertilizer are establishing a new fertilizer plant in Fort Dodge, as an adjunct to their existing **Bell Seed** company. **Donald Bell** says it will produce 50 daily tons of Super Bell Brand All-Weather Organic Base Fertilizer, and other locally used analyses.

* * *

Del Que Farm Service have established at Earlville a 44 by 100 foot fertilizer storage plant.

* * *

The Wictors Fertilizer Co. has been incorporated at Sioux City to manufacture fertilizers, by **Gilbert Wictor,** president, **Earl A. Juhl,** secretary, and **Frank R. Wictor,** treasurer.

* * *

North-Ag Chemical and Supply are ready to go into operation with their mixing and bagging plant at Summit, according to **Lewis Eymann,** partner.

* * *

Farm Service Company managers and directors were brought together recently for a bulk fertilizer demonstration on a farm at Allison. Makers of application and related bulk handling equipment put on the show.

KANSAS

Eagle-Pilcher are in operation with their Galena plant, designed by **Monsanto** and producing 300 daily tons of sulphuric acid by the contact process.

* * *

Kingman Liquid Fertilizer Inc. has been chartered at Kingman for $100,000 by **Russell Heldenbrand, R. Heldenbrand, Sr.** and **Charles Stewart.**

KENTUCKY

Bluegrass Plant Foods, Inc. Danville, gained good publicity and doubtless much good will when, as newcomers to the town, one of their first acts was to contribute $500 to the Boyle County Fire Fund to secure fire protection to the county area in which Bluegrass is located.

NEBRASKA

Republican Valley Chemicals, Inc. is in operation at Alma, offering custom application of anhydrous ammonia. **Joel Wiens,** a major stockholder, is manager.

NEW JERSEY

General Chemical Division, Allied Chemical & Dye, last month dedicated its large new research laboratory in Morris Township, a $2,000,000 facility. With the completion of this laboratory, every division of Allied will have added new research facilities since the end of the war.

The new lab is a 3-story building with 55,000 feet of floor space, housing more than 30 laboratories, a technical library and engineering research offices. A feature is a special section for radio-active research.

It replaces the Divisions Long Island operation, one of the first major chemical research centers in the nation. The central research program will be coordinated with pilot plants at Baton Rouge and Marcus Hook.

NEW YORK

Fertil-Ade of N. Y., Inc., Corona, has been incorporated with 200 shares of no par value. Filers: **Morris Nisonoff; Marietta Gambardella; Francis W. Malito; Charles S. Gambardella.**

NORTH CAROLINA

Farmers Cotton Oil Company, Wilson is doing well. President **T. F. Bridgers** sends us some pertinent data: They started in 1902 with $14,200 which has grown to $1,781,777 in assets. Since 1934 they have paid stockholders $649,670. Last year, in Wilson alone, they paid workers $160,654.39.

Stockholder employees represent more than 300 years of service with the company . . . **W. C. Campen,** stockholder-sales agent, for example, has represented them for 45 years. **W. A. Lucas** has been their attorney for 41 years.

No wonder Mr. Bridgers writes: "Thought maybe you might be interested in how we are getting along." This gives all of us a very clear idea, not only of how, but why.

OHIO

Virginia-Carolina's new phosphoric plant at Fernald is in full production and under the supervision of **Frank R. Keenshan,** superintendent, and **G. G. Morisette,** assistant, both veterans of the company's Charleston, S. C. operations.

* * *

The Farm Bureau Cooperative Association, has announced for a $750,000 fertilizer plant near Mt. Gilead, now under construction, which will be one of the most modern in the nation and capable of producing 70,000 annual tons of granulated fertilizer. It will be designed and built by **A. J. Sackett and Sons,** Baltimore, and is due to be completed by mid-1955, according to vice-president, operations, Wayne H. Shidaker. The new plant will make a total of six FBCA plants in Ohio. The others are at Alliance, Dayton, Glendale, Marietta and Maumee. **Robert A. Garn** will be in charge.

* * *

National Spectrographic Laboratories, Cleveland, is offering a service which may be of real interest to our readers. They do a laboratory analysis of leaves from trees etc. and tell the farmer whether there exists any mineral deficiency.

OKLAHOMA

John Deere Chemical which, as we reported here last month, is in production at Pryor, has appointed **R. W. Freef & Co.** as its exclusive sales agent for technical grade urea, which will not be expected in production until next Spring.

* * *

Monarch Fertilizer has begun construction at Pryor, near the **Deere** plant, a 90,000 gallon storage facility to carry out its arrangement with Deere Chemical to distribute an-

EXACT WEIGHT Sacking Scales

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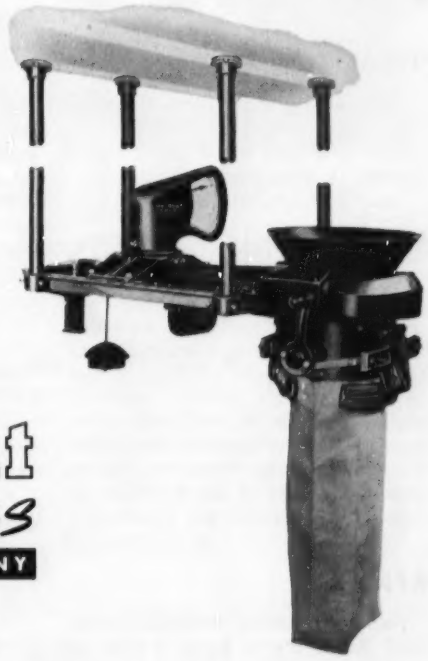
Model 2225, above, is one of five different types available to provide the correct installation for every need.

Model 2229, below, is designed for ceiling suspension. Other mountings include post, pedestal, and dolly.



One simple operation does the work of three! One man can bag, weigh, and check as much as 100 tons of free-flowing material per day from overhead hopper to foot-level conveyor. The saving in labor costs, together with the saving from elimination of overweights, can pay for the installation. Simple to operate—has just two controls. It takes just four easy motions to attach a bag, fill it, weigh it, and release to conveyor. Write for details.

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hydrous ammonia in Oklahoma and Kansas. **K. A. Schmitt** is president and general manager.

OREGON

W. C. McCall, Portland, has sold his anhydrous ammonia facilities to **Chemical Enterprises,** New York. The nine establishments will supplement the three they already owned to serve the wheat areas of Washington, Oregon and Idaho. The facilities include conversion to aqua ammonia. The price is said to be around $750,000.

PENNSYLVANIA

McKeesport city officials have authorized **Organiculture Co.,** Miami, Florida, to prepare specifications for presentation on the conversion of city garbage to commercial fertilizer.

TENNESSEE

Shea Chemical, Columbia, has bought an 80-acre tract where it plans a future phosphate washing plant. This is the first phosphate land this concern has bought for mining its own rock.

TEXAS

Hughes Fertilizer and Chemical Company, Sanger, is a new anhydrous ammonia distribution outfit, owned by **John Hughes.**

UTAH

Westvaco has purchased the last known patented phosphate rock and shale deposit in the West, according to local information. Located in Rich County, it will add millions of tons to the concern's existing reserves, according to **W. N. Williams,** president. Westvaco operates four electric furnaces in Pocatello. **O. A. Power,** manager of the fertilizer division there handled the transaction.

AFRICA

Societe d'Etudes Nord-Africaines de l' Azote are to build a plant in southern Algeria to produce 100,000 annual tons of fertilizer. The concern is backed by the **Montecatini** interests, **Air Liquide** of France and **Indufina** of Germany.

GERMANY

Knapsack-Griescheim, Cologne, are planning a new ammonia plant with an output of 20,000 annual tons. When they can clear with the Allies they plan also to build a second phosphorus furnace, which will bring their production to around 25,000 annual tons. They are now limited to 10,000 annual tons.

INDIA

Dharamsi Morarji Chemical, Bombay, are building a sulphuric plant with a 30 daily ton capacity. This will largely serve the **Burmah-Shell** plant, now under construction, which will require some 9,000 annual tons of the acid.

* * *

Hyderabad Chemicals & Fertilizers, Ltd. is looking for American participation with capital and technical aid to permit expansion of their operations. They are now producing about 6,000 annual tons of superphosphate, but the Indian demand, as our readers know, is rapidly expanding. Company officials say the entire program involves $700,000 and they will gladly come to America to discuss the matter. If interested, write **L. Gupta,** Chief Technical Advisor, or **A. A. Rahimtula,** Managing Director, at Alladin Buildings, Secunderabad, India.

The program, which the firm says was prepared under the direction of the Central Laboratories for Scientific and Industrial Research in Hyderabad, includes the following installations:

A sulphuric acid plant, either contact or tower, with a capacity of 20 to 25 tons of 100-percent acid a day.

A superphosphate plant of the continuous-process type for the manufacture of superphosphate of a capacity of 60 to 75 tons a day.

A solvent extraction plant of the continuous-process type with a capacity of 40 to 50 tons a day.

NETHERLANDS WEST INDIES

Lago Oil and Transport, which is a subsidiary of Standard Oil of New Jersey is in operation with a 40 daily ton sulphur recovery plant at Aruba, which was designed and built for them by **Girdler Co.**

"Old Friends" On Bemis' New Calendar

Several "old friends" will greet you from the 1954-55 Bemis Calendar. The illustrations are full-color reproductions of the more popular Old Mill etchings that have been the theme of Bemis Christmas cards for many years. If you are not getting the annual Bemis calendars, write them: Bemis Bro. Bag Co., 408 Pine Street, St. Louis 2, Mo.

Powell-Squibb-Mathieson Join Overseas Forces

Wiliam J. Pollert, executive vice president of John Powell & Co., announces the move on September 3rd, of export activities from One Park Avenue to 745 Fifth Avenue, the headquarters office of the Squibb-Mathieson Overseas Division of Mathieson Chemical Corporation.

Personnel remains the same with C. J. Fredrickson as manager, A. E. Collazo, export sales manager, and the remainder of the staff. The move involves John Powell Export Corporation and the Overseas Division of John Powell & Co., consolidating in one office all the overseas sales activities of the two Powell and the Squibb-Mathieson Overseas Divisions.

Bradley Moves Offices

Bradley & Baker, of New York, who last month announced two additional offices, one in Norfolk, Va., the other in Atlanta, Ga., announce a change in the address of their Indianapolis, Ind., office to 619 Board of Trade Building.

Bradley & Baker, in addition to their New York office, have offices in Houston, Texas and St. Louis, Mo.

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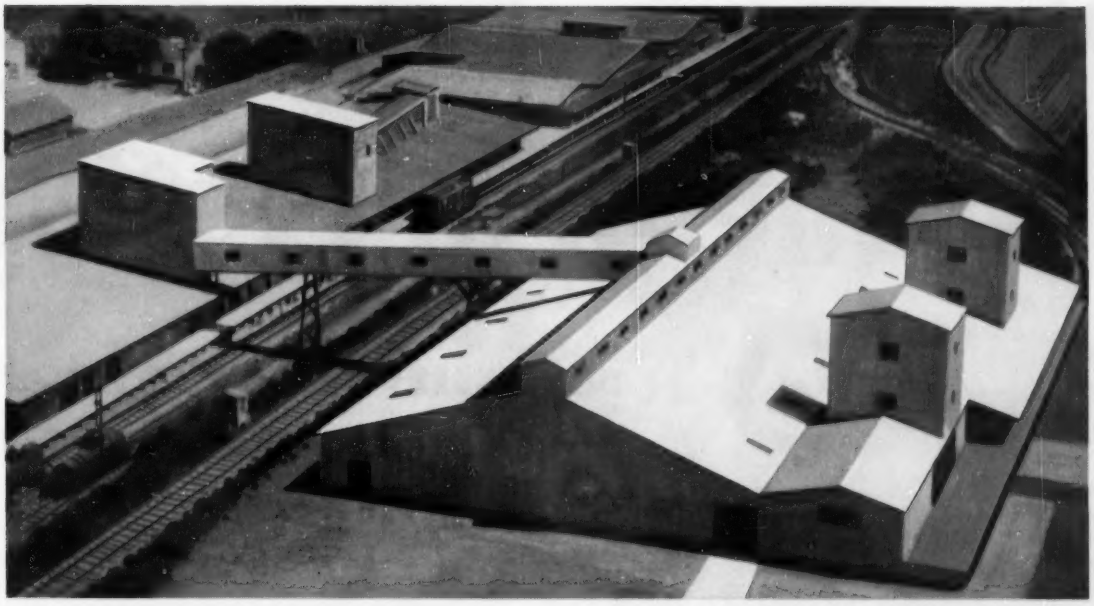

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PICTURES TAKEN AT THE MADISON, WISCONSIN ANHYDROUS CONFERENCE

Wells And Bradfield At NFA Fall Meeting

Oris V. Wells, administrator, Agricultural Marketing Service, U. S. Department of Agriculture, and Dr. Richard Bradfield, head, Department of Agronomy Cornell University, will be the principal speakers at the fall meeting of The National Fertilizer Association to be held at the Hollywood Beach Hotel, Hollywood, Florida, November 10-12.

The outlook for farm prices in the next few years and its effect on the agricultural economy will be the topic of Mr. Well's address. Dr. Bradfield will speak on the production of organic residues in the soil and how to manage them for maximum returns.

Mr. Wells, one of the country's leading agricultural economists, is particularly noted for his ability to interpret economic situations as they relate to national farm programs. He has been with the Department of Agriculture for 25 years, most of which was spent with the former Bureau of Agricultural Economics, a predecessor of the Agricultural Marketing Service. He was chief of the BAE from 1946 until being appointed AMS administrator in 1953. As AMS administrator, he is responsible for the distribution and marketing programs of the Department and for coordination of all the Department's statistical work.

Dr. Bradfield is recognized as an outstanding authority in the fields of agronomy and soil science. He has been professor of soil technology and head of the department of agronomy at Cornell University since 1937. From 1920 to 1930 he was at the University of Missouri where he was in charge of research and teaching of physical chemistry of soils and colloid chemistry in the Soils Department. He was professor of soils at Ohio State University and associate in agronomy at the Ohio Agricultural Experiment Station from 1930 to 1937. He is the author of numerous papers on soils and fertilizer.

The National Fertilizer Association's fall meeting will bring together an estimated 500 representatives of fertilizer manufacturers and associated industries. Additional program details will be announced at a later date.

KEY TO PICTURES

1. Grant Davis, Pacific Coast Borax; Bill Kivlahan, Howard Lindau and D. E. Matthews, all of Swift & Co's Madison office. 2. Anhydrous ammonia applicator examined by John Newell, Hoosier Nitrogen and Supply, Bunn Raub, M. B. Raub Co., Joe Whittington, Mathieson Chem. 3. Head table at banquet: Dr. Arthur Smith, Mathieson, Dr. Emil Truog, U of Wisconsin, George Johnson, at mike, Successful Farming magazine; Robert Tilton, U of Wisconsin; Dr. O. J. Attoe, Chairman, U of Wisconsin Soils Dept.; Rudolph Froier, Dean of Ag. School, U of Wisconsin; Dr. George Smith, U of Missouri soils dept.; Ken Cross. 4. W. J. Chapman, University of Wisconsin, Soils Dept., thanking for the ovation given him at the conclusion of the banquet. 5. Mathieson's portable irrigation unit demonstrates irrigation high nitrogen technique, pumping water from Lake Mendota. 6. Sidewalk conference: W. J. Hande, Grace Chemical; Walter Mangel, Jr., and Sr., of Crystal Lake Farm Store; A. H. Carne, Pittsburgh Coke & Chemical; F. J. Ronan, Grace Chemical. 7. Norman LeBlanc, right, Henry Valve, points out features to Hampton Pugh, Pugh Gin & Fert. Co. 8. Dr. R. P. Thomas, IM & C and Dr. Kermit C. Berger, University of Wisconsin soils dept. 9. Dr. M. L. Jackson, University of Wisconsin soils dept.—"don't use anhydrous in sandy soils." 10. Dr. Arthur E. Peterson, University of Wisconsin soils dept., talking on nitrogen soil testing and prescription farming. 11. Wayne Peck, Phillips Petroleum Co., and Mick Arthur of McArthur Chemicals. 12. Wm. Cannell and Keith Wilson, farmers, ask Dr. Kermit C. Berger to study alfalfa sample. Diagnosis: Boron deficiency.

CFA Announces 31st Annual Convention Plans

The Hotel del Coronado, Coronado, California will be the scene, November 15-16 of the 31st annual convention of the California Fertilizer Association. Attendants are asked to direct their reservations requests direct to the hotel. American plan rates are $14 per day per person, double occupancy; $18 per day for single occupancy . . . and you can get a lanai type sitting room for $8 per day additional.

Arrivals should be planned for Sunday November 14 so as to get the full enjoyment and good out of the meeting. Business sessions run all day Monday, and much important work is to be done in which you should participate.

Outstanding speakers will emphasize the important position of the commercial fertilizer industry in the agricultural picture. Among them will be Francis R. Wilcox, assistant general manager & treasurer, Sunkist Growers; Paul T. Truitt, president, American Plant Food Council, Inc.; W. R. Allstetter, vice president, National Fertilizer Association; Jesse W. Tapp, vice chairman of the board, Bank of America, and member of two of President Eisenhower's Commissions; Allen B. Lemmon, chief, California Bureau of Chemistry; and M. F. McCollam, Western states manager, American Potash Institute, Inc., and also Chairman of the Association's soil improvement committee.

Francis R. Wilcox, principal speaker at the coming convention of California Fertilizer Association. In addition to being general manager and treasurer of Sunkist Growers, he holds important posts in his industry, in finance, and as special consultant to the Secretary of Agriculture.

Three Directors will be elected at the Membership Business Meeting to serve during the next three years.

Tuesday, November 16, will be devoted to recreation. Scheduled are golf tournaments for men and for women, a ladies putting contest, bowling, and bridge tournaments. The ladies will be guests of the Association at a luncheon at lovely new Kona Kai Club on San Diego Bay and a boat excursion of the entire Bay. Cocktail parties will be sponsored by Balfour, Guthrie & Co., Limited, and the American Potash & Chemical Corporation. A broiled steak dinner will be served through the courtesy of Shell Chemical Corporation, Nitrogen Division of Allied Chemical & Dye Corporation, and Producers Sales Company. The program will conclude with the annual banquet featuring entertainment and dancing.

CFA PROGRAM

SUNDAY, NOVEMBER 14, 1954

6:30 P.M. Joint Meeting, Board of Directors and Budget Committee, Beginning With Dinner—Patio Room, Hotel del Coronado

Ball Room, Lobby Floor, Hotel del Coronado

7:00 A.M. Special Breakfast for Women Golfers **Only** —Set Menu—Crown Room

*8:00 to 10:00 A.M. Regular Breakfast Hour—Crown Room

8:00 A.M. Registration of Delegates and Ladies—Main Lobby

9:00 A.M. Address of Welcome—Honorable Walter Vestal, Mayor of Conorado

9:05 A.M. Business Session Opened—B. H. Jones, President, California Fertilizer Association

9:20 A.M. Annual Report—Sidney H. Bierly, Executive Secretary & Manager, California Fertilizer Association

9:30 A.M. "Our Place in California Agriculture"—M. E. McCollam, Chairman, Soil Improvement Committee, California Fertilizer Assn.

9:45 A.M. "Report of the Year"—Allen B. Lemmon, Chief, California State Bureau of Chemistry, Sacramento

10:05 A.M. Recess

10:15 A.M. "The Fertilizer Paradox in California"—W. R. Allstetter, Vice-President, National Fertilizer Association, Washington, D. C.

10:45 A.M. "Fertilizer Facilities and Supply Outlook" —Paul T. Truitt, President, American Plant Food Council, Inc., Washington, D. C.

11:15 A.M. "Role of the Fertilizer Industry in Relation to Agricultural Adjustment Problems"—Jesse W. Tapp, Vice Chairman, Board of Directors, Bank of America, Los Angeles

11:45 A.M. Recess for Luncheon

*12:30 P.M. Luncheon for all Delegates and Ladies—Set Menu—Crown Room

1:15 P.M. Award Presented to Man-of-the-Year

1:30 P.M. "An Appraisal of World Conditions As They Affect California Agriculture"—Francis R. Wilcox, Assistant General Manager and Treasurer, Sunkist Growers, Los Angeles

2:15 P.M. Reassemble in Business Session—Ball Room

2:20 P.M. First Public Showing of New CFA Film in Color and Sound, "California Grows With Fertilizer" —Virgil A. Frizzell, Chairman, Motion Picture Sub-Committee of the Soil Improvement Committee, California Fertilizer Association

2:40 P.M. ANNUAL BUSINESS MEETING OF MEMBERSHIP

1. Election of Directors

a.—Report of Nominating Committee, Chairman W. L. Dixon, Jr.

2. Report of Constitution and By Laws Committee, Chairman J. M. Quinn

3. Consideration of CFA Budget—Wm. E. Snyder, Chairman, Budget Committee

a—Interim Budget for Period October 1, 1954 to December 31, 1954

b—Budget for Calendar Year 1955

4. Soil Improvement Committee Budget — Messrs. Snyder and M. E. McCollam

a—Interim Budget for Period October 1, 1954 to December 31, 1954

b—Budget for Calendar Year 1955

3:45 P.M. Announcements and Adjournment of Business Meeting

3:50 P.M. Organization Meeting of New Board of Directors—Ball Room

6:00 to 7:00 P.M. Cocktail Party, Pool—Courtesy Balfour, Guthrie & Co., Limited

7:30 P.M. Charcoal Broiled Steak Dinner, Crown Room, Courtesy of Shell Chemical Corporation, Nitrogen Division of Allied Chemical & Dye Corporation, and Producers Sales Company.

TUESDAY, NOVEMBER 16, 1954

Entire Day Will be Devoted to Recreation and Pleasure

7:00 A.M. Special Breakfast for Men Golfers **Only.** Set Menu, Crown Room

*8:00 to 10:00 A.M. Breakfast, Crown Room

8:00 A.M. Men's Golf Tournament—Caliente Country Club—Green Fee $2.00

10:00 A.M. Men's Bowling Tournament, Coronado Bowling & Recreation Center, (Across and south from the Hotel)—M. C. McNeil, Chairman

12 NOON Ladies Cocktail Party and Luncheon, Kona Kai Club, including Boat Tour of Bay Area—Courtesy California Fertilizer Assn., (Take Boat at Coronado Boat House Across from Hotel Entrance)

*12:30 to 2:00 P.M. Regular Luncheon—Crown Room

6:00 to 7:00 P.M. Cocktail Party, Pool—Courtesy of American Potash & Chemical Corporation

*7:30 P.M. Banquet, Ball Room, del Coronado Hotel

9:00 P.M. Awards—Door, Bridge, Golf and Bowling Prizes—Barbara and Rod Taft

9:30 P.M. Entertainment — Rod Taft, Committee Chairman

10:00 P.M. Dancing to the Fine Music of Vic Vincent and His 10-Piece Orchestra

LADIES' PROGRAM MONDAY, NOVEMBER 15, 1954

7:00 A.M. Special Breakfast for Golfers **Only**—Crown Room

*8:00 to10:00 A.M. Regular Breakfast Hour — Crown Room

8:00 A.M. Registration, Main Lobby

8:00 A.M. Ladies Golf Tournament—San Diego Country Club, Chula Vista—Green Fee $5.00

*12:30 to 2:00 P.M. Luncheon—Crown Room

2:30 P.M. Bridge Tournament—Card Room

6:00 to 7:00 P.M. Cocktail Party, Pool,—Courtesy Balfour, Guthrie & Co., Limited

7:30 P.M. Charcoal Broiled Steak Dinner, Crown Room, Courtesy Shell Chemical Corporation, Nitrogen Division of Allied Chemical Corporation, and Producers Sales Company

TUESDAY, NOVEMBER 16, 1954

*8:00 to 10:00 A.M. Breakfast, Crown Room

10:00 A.M. Putting Contest, del Coronado Hotel Putting Green

12:00 NOON Ladies Cocktail Party and Luncheon, Kona Kai Club, including Boat Tour of Bay Area. Courtesy California Fertilizer Association. (Take Boat at Coronado Boat House across from Hotel Entrance)

6:00 to 7:00 P.M. Cocktail Party, Pool — Courtesy American Potash & Chemical Corporation

*7:30 P.M. Banquet, Ball Room, del Coronado Hotel

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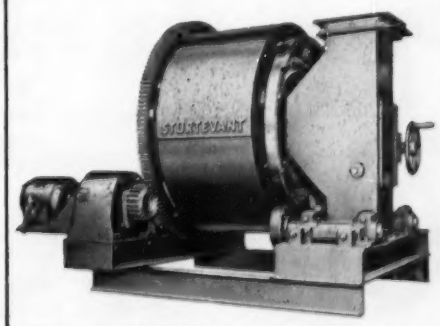

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MISSISSIPPI FERTILIZER CONFERENCE

Buena Vista Hotel, Biloxi, Mississippi
October 27-29

WEDNESDAY, OCTOBER 27

3:00 P.M. Registration in Hotel Lobby
7:00 P.M. Banquet—Si Corley, presiding
Address by Dr. Ben F. Hilbun, President, Mississippi State College

THURSDAY, OCTOBER 28

9:30 A.M. Continued Registration in Hotel Lobby
10:00 A.M. Meeting Called to Order—Charlie McNeil, presiding. Invocation
10:15 A.M. Report of Advisory Committee
10:30 A.M. Five Acre Cotton Contest Discussion—Dalton Gandy & T. M. Waller
11:00 A.M. Address by Dr. Clay Lyle, Dean and Director of Agricultural Services, Mississippi State College
11:30 A.M. "Mississippi Fertilizer Law"—Si Corley
Noon
6:30 P.M. SHRIMP JAMBOREE

The program for Thursday afternoon and Friday morning will be handled by State College, in the form of a Fertilizer Short Course, patterned after the 1953 meeting. Meeting will adjourn at noon Friday.

There will be a registration fee of $2.00, except for agricultural workers. John T. Caldwell, Jr. is treasurer of registration fees, and will serve as Chairman of the Reception Committee. Please make your own reservation at the Buena Vista Hotel.

SOUTH CAROLINA FERTILIZER CONFERENCE

Wednesday, November 3, 1954
B. D. Cloaninger, Head, Department Fertilizer Inspection and Analysis Presiding

11:30 a.m. Registration (no charge) —Lobby Clemson House
1:30 p.m. Welcome ..... Dr. R. F. Poole, President Clemson Agricultural College
Remarks ..... Dr. M. D. Farrar, Dean of Agriculture Clemson, S. C.
Improving our Fertility Program ..... J. N. Davis Epting Distributing Co. Leesville, S. C.
Soil Testing in South Carolina ..... Dr. H. G. Allbritten Associate Agronomist S. C. Experiment Station Clemson, S. C.
Nitrogen (Solid, Liquid and Gas) for Direct Application ..... Dr. E. R. Collins, in Charge Agronomy Extension N. C. State College Raleigh, N. C.
More Efficient use of Fertilizer ..... Dr. J. Fielding Reed American Potash Institute, Inc. Atlanta, Ga.
Pasture Grazing Results ..... Dr. W. A. King Dairy Husbandman, S. C. Experiment Station Clemson, S. C.
Livestock Sanitary Work ..... Dr. R. W. Carter, Director Livestock Sanitary Department Columbia, S. C.
4:30 p.m. Tour of College Campus and Pastures
7:00 p.m. Banquet, Clemson House
Introduction of Speaker ..... D. W. Watkins, Director S. C. Extension Service Clemson, S. C.
"Whither Bound" ..... Dr. Ivan E. Miles, Leader Extension Agronomy Mississippi State College State College, Miss.

Thursday, November 4, 1954
Dr. O. B. Garrison, Director, S. C. Experiment Station Presiding

8:30 a.m. Crop Response to Boron and Manganese ..... N. R. Page, Associate Agronomist S. C. Experiment Station
Research with Tobacco Fertilizer ..... J. F. Bullock, Agronomist U.S.D.A. Pee Dee Experiment Station Florence, S. C.
Tobacco Fertilizer Recommendations for 1955 ..... J. W. Lewis, Extension Tobacco Specialist Florence, S. C.
General Crop Fertilizer Recommendations ..... Dr. J. B. Pitner, Head Agronomy Department Clemson, S. C.
Fertilizer Pesticide Mixtures ..... Dr. J. H. Cochran, Head Entomology & Zoology Department Clemson, S. C.
S. C. Marketing Facilities and Services ..... J. E. Youngblood, Chief Extension Division Marketing Columbia, S. C.
Financing the 1955 Crop ..... Henry S. Johnson, Director of Information Farm Credit Administration Columbia, S. C.
The New Fertilizer Law ..... B. D. Cloaninger, Head Department of Fertilizer Inspection and Analysis Clemson, S. C.
Discussion .....
12:00 Noon Adjourn

ALLSTETTER SPEAKS TO SOUTH CAROLINA SOCIETY

Fertilizer is more important to the farmer today than it was in the "lush" period 3-6 years ago, W. R. Allstetter, vice president of The National Fertilizer Association told members of the South Carolina Plant Food Educational Society at their fifth annual meeting in Clemson, S. C., September 13.

Using data developed by Clemson College, Allstetter explained how, in every case, proper use of fertilizer in combination with other good farming practices reduces the unit cost of producing farm crops thus increasing profits per bushel, per pound or per ton. This, he emphasized, is even more important when conditions are less than ideal, as they are today, because farmers must take advantage of every opportunity to cut costs and boost profits in order to stay in business.

In the case of cotton, he pointed out that fixed costs per acre are the same regardless of yield. By following Clemson College fertilizer recommendations, South Carolina farmers could nearly double their present average cotton yields. At the same time, the cost per pound to raise the cotton would be reduced, and the average profit per acre would be increased from about $15.50 to nearly $60.00.

Allstetter also called attention to a tremendous opportunity for increased profits in soybean production. Under average conditions, South Carolina farmers now realize about $6.00 per acre profit from soybeans which presently are planted on only about 182,000 acres. By following Clemson College recommendations, profits per acre would skyrocket to nearly $50.00 per acre.

To illustrate how fertilizer can be used to help solve the farm surplus problem, Allstetter pointed out that South Carolina farmers could afford to raise a much smaller cotton crop than at present and still make a higher profit — provided they would make proper use of fertilizer and other good farming practices. In 1953, 695,000 bales of cotton were harvested in the State from 1,175,000 acres, an average yield per acre of 283 pounds. Profit was estimated by Clemson College at around $18 million. By following Clemson College recommendations, however, yield of lint cotton could be increased to around 500 pounds or one bale per acre. Even assuming that acreage were slashed to 400,000—thus producing only a 400,000 bale crop—total profit actually would be increased by 22% to $22 million.

"Of course we are talking about a theoretical situation," said Allstetter. "But if these figures are correct, even under ideal conditions, then they set up worthwhile goals."

"The suggestion is made occasionally that a way to cure the surplus problem is to quit using fertilizer," he said.

"This would undoubtedly be effective, just as it would cut down production if we destroyed all farm machinery and prohibited the use of pesticides and good seed. It is nonsensical, however, to suggest that farm problems should be solved by cutting efficiency. A more realistic approach is to encourage more efficient production so that the farmer can make more money per bale, per bushel, or per ton. If he receives a higher profit for each unit he produces, obviously he can maintain or even increase his income with the production of less units.

"In achieving lower unit costs and higher efficiency, fertilizer is an indispensible tool."

The society elected E. D. Sallenger Jr., Florence, as president. He replaces Fred L. McNatt, Clemson. Other new officers are Henderson Pitts, Clinton, vice president, and W. B. Nichols, Florence, secretary-treasurer. Directors are Pitts, Nichols, Hugh Foster, Spartanburg, and Albert Oliphant, Chester.

McNatt, presided over the meeting.

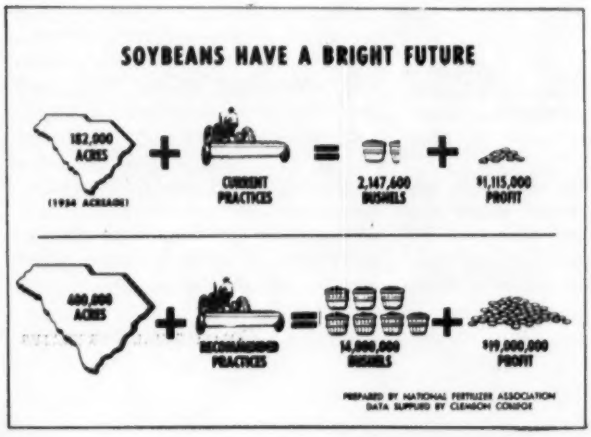
Dr. R. F. Poole, president of Clemson College, in welcoming the group spoke briefly of research work in progress at the college.

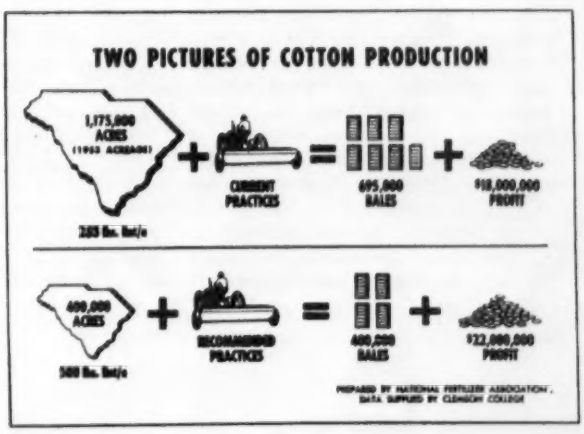
Dr. M. D. Farrar, dean of agriculture, explained the new agriculture set up which started July 1—integration of extension, experiment station, and college work. He briefly discussed new courses and research. Approximately 250 research projects are under way, he said.

Other speakers included Frank Barton, Columbia, assistant state supervisor of agricultural education, in charge of Future and Young Farmer program; D. H. Banks, J. B. Friday, G. C. Shirley, Clifford T. Smith, state master farmer last year; and Hugh A. Woodle, Clemson leader in agronomy extension work.

Frederic H. Heidleberg, Memphis, Tenn., spoke at the annual banquet. He is supervisor of the southeastern area of the National Cotton Council.

Audley H. Ward, Savannah Valley District Extension Agent, served as toastmaster.





PESTICIDES

DOW'S ALLEN IS NEW PRESIDENT OF NAC

Nearly 600 delegates, the highest attendance record in the 21 years of National Agricultural Chemicals Association conventions, turned out last month when NAC met at Spring Lake, New Jersey. The keynote was set by outgoing president, Paul Mayfield, Hercules Powder, who showed how the dollar volume of pesticides — $300,000,000 annually — while small in the sum total of the national economy, looms large in the effect it has upon the public health and the protection of the nation's agriculture. "Your responsibility to the people of this country and the stake you have in this business is far out of proportion to your dollar sales," he said.

He told the industrialists that the benefits that could accrue to the farmer and the housewife "through the judicious use of pesticides are equal (at least) to the cash value of our responsibility" to the American public.

"We are in a field that has a very direct and immediate effect upon our health, nutrition and economy," Mr. Mayfield emphasized. He pointed out that "this enormous share" in the well being and economic structure of our country will be reflected in the years ahead by stepped-up research and better, safe and economical agricultural chemicals.

He said that millions are being expended for research in agriculture and millions more will be made available so long as there is a reasonable profit to made in current day operations and from which funds for research can be plowed back.

"If we as members of this industry," Mr. Mayfield warned, "do not supply the research to carry this whole industry forward, you can be certain that someone else will do it for you—and send you the bill. It is as simple as that. I urge you, don't let it go by default."

The subject of the antibiotics, on which you will find additional material in this issue of Commercial Fertilizer, was given an important spot in the meeting. John C. Dunegan, USDA specialist, who told of the field and laboratory tests under way to harness the agricultural values believed inherent in streptomycin, terramycin and other "miracle drugs" whose use, until lately, has been confined to the animal kingdom.

"Streptomycin and mixtures of streptomycin and terramycin have drastically reduced blight infections on apples and pears," he said. He reported that in an extensive experiment in California five applications gave satisfactory control when the materials were used at a rate of 30 to 33 parts of antibiotics to a million parts of water, and, that at double this rate of application, almost complete elimination of the disease was obtained.

Dunegan pointed out that only relatively small quantities of these antibiotics are required to control diseases and that as little as 1/56 of an ounce of one of the antibiotics in 100 gallons of water is sufficient to bring about control of certain plant diseases. In addition to terramycin and streptomycin another material cycloheximide proved to be effective against some mildew fungi, turf diseases and rust of mint. He said that the material is now being used extensively for the control of cherry leaf spot. He said that the chemical is supplied to growers in tablet form.

Control of certain vegetable diseases in experimental work was pointed out by Mr. Dunegan. He said that in California bacterial spot of tomatoes and bacterial canker of tomatoes was "Markedly reduced" by soaking infected seeds in a streptomycin solution before planting. He said that at the Plant Industry Station streptomycin eradicated halo blight of beans in field test plots.

"Several years ago, I publicly lamented," he said, "that plant pathologists did not have magic control materials like DDT, parathion, BHC and others possessed by our entomological colleagues. Our prospects are now much brighter, for the antibiotic materials offer possibilities of (plant) disease control we hardly dared dream of 10 years ago."

Dunegan said that more than 3000 antibiotic materials have been investigated since 1942. He said that very few of these are actually in use today but that the production of five commonly-used antibiotics reached a total of 740 tons in 1953—"a tonnage that is indeed a tribute to a genius of American industry."

Further comment on antibiotics was presented by William R. Jester, assistant director of the Antibiotics Division, Department of Health, Education and Welfare who told of the animal protection offered by various of the drugs, but said that the most important recent use of antibiotics is in the control of plant diseases.

Said Mr. Jester research in the use of antibiotics as agricultural pesticides reached its peak in 1953. Two manufacturers independently submitted to the Food and Drug Administration, for review, the results of a series of experiments on the use of streptomycin and a streptomycin-terramycin combination for control of fire blight of apple and pear trees and for blight of walnut trees in the Pacific coast area. In connection with the submission of this data and application to the Department of Agriculture for registration of these products, he stated that the antibiotic regulations of the Food and Drug law were amended this year.

As amended he quoted the law as saying, in substance, that the antibiotics "intended solely for application to plants for the control of plant diseases" is not subject to the requirements of the drug section of the law if the antibiotic product con-

tains one or more suitable denaturents that make it unfit for drug use.

Jester said that antibiotics as food preservatives to reduce heat sterilization time and temperature would be a dangerous procedure to eliminate bacteria. "The demise of antibiotics for use as preservatives in heat sterilized food," he added, "did not mean the end of investigations of their use as preservatives for other foods—particularly fresh and frozen foods including beef and beef products, a variety of fishery products, dressed poultry, cream filled bakery products, and a variety of vegetables."

He told members of the pesticide industry that the primary reason for being of the antibiotics is to heal the sick.

"We should ever be alert to prevent their use in any manner that would negate their value as important life saving drugs," he cautioned.

Clearing up a common misconception, Dr. David E. Price, assistant surgeon general, US Public Health Service denied that insecticides cause any diseases or increased susceptibility to disease in either man or animals.

He told NAC members that this opinion is based on the results of extensive research. He said that objections to the use of insecticides have ranged from the serious to the unfounded or ridiculous.

Dr. Price pointed out that insecticides, particularly DDT, have been alleged to be responsible for an increase in poliomyelitis in gastrointestinal complaints, cancer, and for a wide range of psychoneurotic disturbances.

"The vast majority of physicians and other scientists who have studied the problems, do not accept these claims," Dr. Price stated. He said that although cases of acute poisoning have been reported for some of the newer pesticidal chemicals, their record is generally good.

Lee Hitchner, NAC's executive secretary, discussed the sweeping changes which have brought about an entirely new pattern of plant location throughout the country.

"Factors influencing the pattern have affected the location of units for manufacturing of the basic chemicals and for the formulation of the finished goods—whether they are insecticides or weed killers," he said.

"There is, of course, a great increase in the number of basic manufacturing plants and a corresponding increase in the number of formulators. Concentration of these units in the Northeast of the United States prior to 1942 has now given way to a much more general distribution—in the main toward the south and west as far as Texas and on the West Coast. There is a definite indication that the location of these plants has tended to follow the distribution of crops which require pesticides in the largest quantities.

That is, greater concentration of basic manufacturing plants and formulators are now occurring in the cotton-growing regions of the South and in the vegetable and fruit regions of Florida and of the West Coast. In a lesser respect this same situation is reflected in the central part of the United States where new uses have brought into operation expanded markets for pesticides. Many other factors have influenced this marked change in the site pattern.

The important Miller Bill will be administered with no "anti-chemicals" attitude, the NAC members were assured by William W. Goodrich, assistant general counsel for FDA. Participating in a panel discussion, Mr. Goodrich noted that the new law makes two fundamental changes, both designed to simplify and speed up the establishment of safe tolerances for pesticide chemical residues on raw agricultural commodities.

"First," he said, "It quite properly assigns agricultural functions to the Secretary of Agriculture and health functions to the Secretary of Health, Education and Welfare. Secretary Benson must decide questions of agricultural usefulness and probable residue levels resulting after use of pesticide chemicals; Secretary Hobby must decide what residue levels may be safely tolerated without hazard to man. This redefinition of functions should go a long way in improving the regulatory scheme.

"Second, the law emphasizes informal procedures, newly designed to facilitate action and to grant a more dominant role to the scientists. The formal type of hearing, in which lawyers become the principal actors, is utilized only as a last resort before taking the matter to the court house for settlement of unavoidable disagreements."

Mr. Goodrich also said that before basic operating regulations are put into the form of a definite proposal they will be discussed with representatives of the National Agricultural Chemicals Association for comment and suggestions.

ELECTED BY NAC

W. W. Allen, manager, Agricultural Chemicals Sales, The Dow Chemical Company, Midland, Michigan, was elected president for a one year term. Allen just completed a year term as vice president of the Association. Fred W. Hatch, vice president, Agricultural Chemicals Division, Shell Chemical Corporation, Denver, Colorado, was elected vice president of the Association.

Allen succeeds Paul Mayfield, general manager, Naval Stores Department, Hercules Powder Company, Wilmington, Delaware, who stepped down from the presidency of the Association after serving one year. Lea S. Hitchner, Washington, D. C., was re-elected executive secretary-treasurer of the Association.

Three members of the Board of Directors were elected for 5-year terms during the meeting. Those elected were: Chester M. Brown, executive vice president, General Chemical Division, Allied Chemical and Dye Corporation, New York; Charles H. Sommer, Jr., vice president, Organic Chemical Division, Monsanto Chemical Company, St. Louis, Missouri; and J. V. Vernon, president, Niagara Chemical Division, Food Machinery and Chemical Corporation, Middleport, New York.

Those retiring from the Board of Directors were: J. M. Taylor, president, Taylor Chemical Company, Aberdeen, North Carolina; Byron P. Webster, vice president, Chipman Chemical Company, Inc., Bound Brook, New Jersey; and James McConnon, vice president, McConnon and Company, Winona, Minnesota.

JACOB PAPER SHOWS MORE FERTILIZER-PESTICIDE MIXES

Increasing interest in and use of fertilizer-pesticide mixtures by farmers are emphasizing the need for expanded research and study of the production, distribution, and application of these materials—members of the National Joint Committee on Fertilizer Application and the American Society for Horticultural Science were told August 30 at Gainesville, Fla., by K. D. Jacob of the U. S. Department of Agriculture.

In a paper presented at a joint meeting of the two groups, Mr. Jacob stated that incomplete information has shown consumption of such mixtures reached a total of 87,000 tons in the United States and Territories in 1952-53. Further increases in consumption occurred this last year, he said, particularly in the North Central region where there is great interest in fertilizer-insecticide combinations for control of wireworms and rootworms on corn land.

Greatest use so far, however, has been in the South Atlantic region, which accounted for 69 percent of the total consumption of the mixtures in 1952-53. Approximately 100,000 acres of corn in South Carolina alone were treated during that season with a chlordane-fertilizer mixture for controlling wireworms and the southern corn rootworm.

The commercial use of the fertilizer-pesticide combinations has already forged far ahead of research, Mr. Jacob, who heads the section of fertilizer and agricultural lime in the Agricultural Research Service, stated. As a result there are wide differences of opinion even among soils specialists on the merits and practical feasibility of the mixtures. Recommendations concerning their use vary widely from State to State, and sometimes even between agencies in the same State.

Despite lack of experimental data on use of the fertilizer-pesticide mixtures, Mr. Jacob said the demand for them seems likely to continue, perhaps in increasing volume, so long as their use affords a convenient, economical, and reasonably satisfactory way of combining crop fertilization with pest control.

Insecticides in powder, granular, solution and emulsion forms have been used, or available, for mixing with fertilizers. Many problems concerning their use, however, are still unsolved. Major ones listed by Mr. Jacob are:

The type of mixture that will supply the desired quantities of both pesticide and plant nutrients at the desired rate per acre.

Timing of the pesticide application to fit the time for applying the fertilizer—which involves the kind of pest and crop and the degree of persistence of the pesticide in the soil.

The most effective method of applying the materials—applying the pesticide separately but simultaneously with the fertilizer would solve one of the major problems.

USDA Reports Control For Southern Corn Pests

New U. S. Department of Agriculture publications that are likely to interest the southern corn farmer describe ways to prevent damage by two insect pests of this crop—the sugarcane beetle and the southern cornstalk borer.

The publications are: Leaflet 362, The Sugarcane Beetle on Corn in the Southern States," and Leaflet 363, "The Southern Cornstalk Borer." Both were prepared by entomologists of USDA's Agricultural Research Service, and included descriptions of the insects and their damage, as well as methods of control.

Single copies of Leaflets 362 and 363 can be obtained free from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Sou Weed Conference Named For January

The Eighth annual meeting of the Southern Weed Conference will be held early in 1955 at St. Petersburg, Florida, on January 17 through 19, it was announced by Dr. Warren C. Shaw, president. All sessions will be held at Hotel Soreno.

Dr. Shaw, who is a USDA Agronomist in the Section of Weed Investigations at Beltsville, Md., said the purpose of the meeting is to bring together all phases of weed control research and education in the southern part of the United States.

Attending will be representatives from state experiment stations, USDA, extension services, the agricultural chemical and farm equipment industry, vocational agriculture and the farming industry.

Weed control in pastures, field crops, horticulture and other phases of agriculture will be discussed by leaders in this field from all southern states. Dr. Shaw said that the full program would be released at a later date.

Officers for the 1955 Conference include Dr. G. C. Klingman, North Carolina State College, Raleigh, Vice President and Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Citrus Fungicide Research At California School

The ideal fungicide, sufficiently volatile to protect citrus fruit in transit and storage is being sought by California's Citrus Experiment Station at Riverside.

Thus far, 520 volatile chemicals have been screened in the search for materials containing the most desirable features, Drs. L. J. Klotz and C. N. Roistacher announced.

ANTIBIOTICS PROVING SELVES IN BROAD FIELD OF TESTS

MISSOURI

Terramycin and streptomycin, the antibiotics which have conquered fire blight of apple and pear trees, can be used in far lower concentrations—and with fewer spray applications—than has previously been thought possible.

These conclusions, based on field experiments, were given before the annual meeting of the American Institute of Biological Sciences (Sept. 5-9) by Dr. Robert A. Goodman, horticulturist of the University of Missouri. In his work Dr. Goodman used a mixture of terramycin and streptomycin, known as agri-mycin.

The field trials, Dr. Goodman said, were held during the current season in nine Missouri apple orchards, several of which had fire blight in "epidemic" proportions. There were approximately 1,400 trees in the test plots, and some 30,000 gallons of the antibiotic spray were applied.

Terming the results of the experiments "most gratifying", Dr. Goodman noted that where 100 parts of the antibiotic per million parts of water was the lowest concentration used in 1953, 50 and 25 parts per million were equally effective during the current season.

In 1953, Dr. Goodman found that seven spray applications provided complete control, while in 1954 approximately the same degree of control was afforded by either three or four sprays applied at four-to-five-day intervals before, during and after the blossoming season. His success was achieved, Dr. Goodman reported, despite the fact that "the fire blight infestations were definitely more severe in 1954 than in 1953."

Dr. Goodman said that in the light of this research definite recommendations for the use of antibiotic spray materials would be made by the Missouri Agricultural Experiment Station to fruit growers of that state for the 1955 season.

Similar success in controlling fire blight infestations of pear trees was reported last month by John C. Dunegan, principal plant pathologist of the U. S. Department of Agriculture, who achieved 98 per cent control of the disease with agri-mycin.

MASSACHUSETTS

The payroll of the Commonwealth does not show it, but antibiotics are working for the State. A number of studies are now being conducted on the University Farm to check work performed at other stations and to test various levels of feeding. New substances are being tested in the hope of gaining additional experience and information concerning

(Continued on page 66)

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CF STAFF—COMPILED TONNAGE REPORTS

FERTILIZER TONNAGE REPORTS (in equivalent short tons)
Compiled by COMMERCIAL FERTILIZER Staff

State	August	July	June	April-May-June Quarter 1954	April-May-June Quarter 1953	Season 1953-54
Alabama		13,793	46,696	426,488	330,840	1,024,312[1]
Arkansas	5,303	5,930	28,420	147,461	[2]	366,225
Georgia	13,103	38,504	102,253	761,348	684,311	1,361,254
Louisiana	6,390	6,940	21,290	110,234	101,163	316,757[3]
Missouri	52,738	9,004	13,553	232,260	181,466[4]	756,457
N. Carolina	29,582	9,205	72,232	694,799	685,359	1,815,572
Oklahoma	8,238	2,879	5,701	31,627	27,136	144,367
S. Carolina	11,033	8,667	12,845	160,908	191,677	936,553
Tennessee	9,921	23,256	65,414	322123	306,971	523,300
Texas	12,688	15,472	35,210	169,970	155,857	562,530
California	(reports submitted quarterly)			299,195		
Virginia	(reports submitted quarterly)			314,945	323,265	716,552
Indiana	(reports submitted quarterly)			896,104	283,987	1,180,071
TOTAL	148,996	132,650	403,614	4,567,462	3,272,032	9,703,875

[1] 10 months, October-July [2] Not compiled [3] September-August [4] Estimated from tag sales

MARKETS

ORGANICS: Demand for fertilizer organics continues strong and the market very active. Best price on Domestic Nitrogenous Tankage appears to be $3.75 per unit of Ammonia, bulk, f.o.b. production point. Practically all producers are almost sold completely through June 1955. Chicago Activated Sludge contract sales have been very heavy particularly in the last week for shipment through June 1955 at $2.75 per unit of Ammonia and 50¢ per unit of APA, bulk, f.o.b. Chicago. Price for customers who have not purchased prior to October 1st, 1954, will be $2.95 and 50¢ for fertilizer use.

CASTOR POMACE: This market is exceedingly tight with production sold well ahead by all producers. Last price was $27.00 per ton, bagged, f.o.b. Northeastern production point.

DRIED BLOOD: Chicago market is strong at $8.50 to $8.75 per unit of Ammonia, bagged, unground Blood. The New York market is around $8.00.

POTASH: August deliveries improved over July from domestic sources. Demand is entirely seasonal.

GROUND COTTON BUR ASH: That excellent source of Potash, primarily in the form of Carbonate of Potash and testing currently 35% to 38% K20, is available for immediate and future shipment. Delivered costs approximate delivered cost or domestic Sulphate of Potash.

PHOSPHATE ROCK: As factory operations in the fertilizer industry expand, movement of Phosphate Rock will increase this month. Shortage of ocean freight space has held back export movement somewhat.

SUPERPHOSPHATE: The export sales of normal 20% Superphosphate have relieved considerably the somewhat over-weighted supply position. Triple Superphosphate is in fair balance with demand.

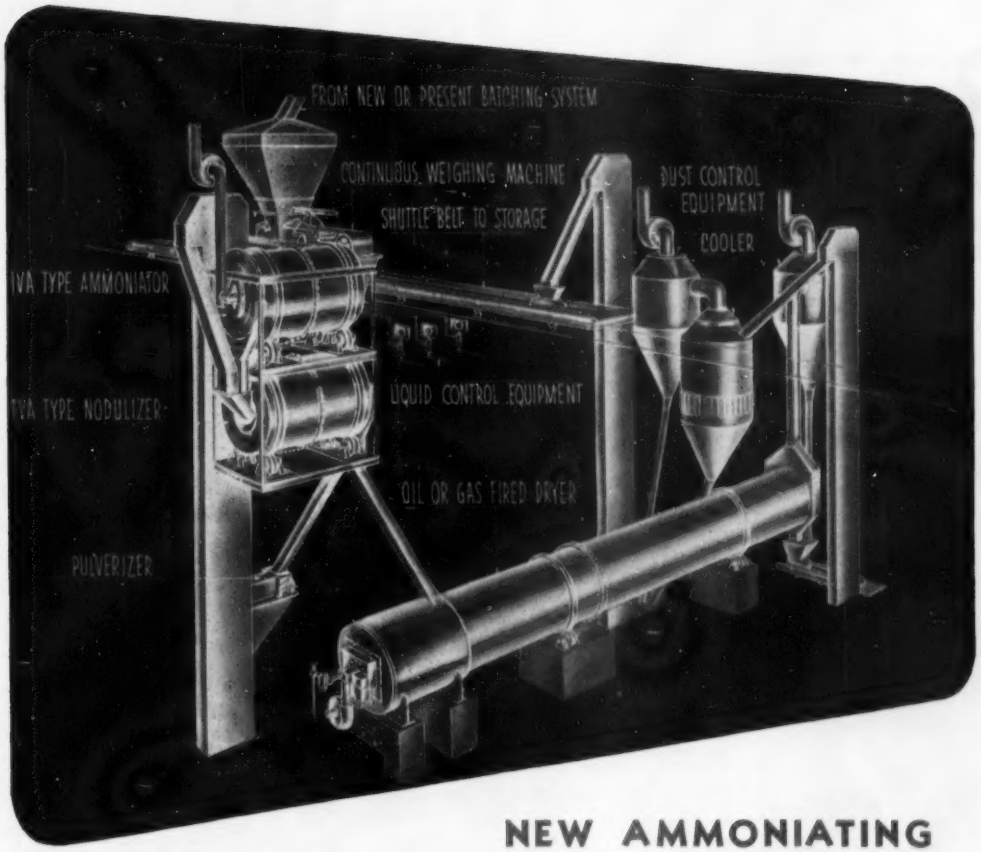
AMMONIUM NITRATE: Demand is seasonal and prices steady.

SULPHATE OF AMMONIA: The market remains firm at previous price levels with no excess supplies of either synthetic or coke-oven material.

NITRATE OF SODA: The market is quiet and demand in seasonal dimensions.

GENERAL: Superphosphate export movement is relieving overbalanced supply position. Considerable activity is noted in organic fertilizer materials at advancing prices.

Several popular organics will be drastically reduced in supply. Potash and Mineral Nitrogen supplies are expected to be adequate.



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Personals . . .

The appointment of Ross R. Worthington as Sales Manager of the Bagpak Division, International Paper Company, was announced Sept. 13 by A. A. Scholl, division manager.
Mr. Worthington succeeds Roy I. LaMarche, who is retiring as sales manager after 50 years of service. He will continue to serve part time in an advisory capacity, Mr. Scholl said.
Succeeding Mr. Worthington as assistant sales manager will be A. G. Clarke, who has been district sales manager in Boston and Atlanta since his return from service in 1945. Mr. Clarke joined the organization in 1932 as a salesman.

Walter Fargason, treasurer of **Ashcraft-Wilkinson Co.,** Atlanta, has been elected a director of the newly formed Foreign Trade Association of that city.

* * *

George Cushman, general manager **Long Island Produce and Fertilizer Company,** Riverhead, New York, has been named a "public member" of the reorganized board of the Long Island Railroad.

* * *

Six appointments within **International Minerals & Chemical Corporation's** Plant Food Division have been announced by **Maurice H. Lockwood,** vice president in charge of that division.

Fred J. Jilek, formerly administrative assistant to the division's general manager, has been named assistant to the operating manager, **John D. Zigler.**

* * *

Roger L. Hugg, formerly labor relations supervisor, has been advanced to the position of personnel supervisor for the division.

Kirk Sanders, formerly agricultural sales representative in Mississippi for Spencer Chemical is now its Southeastern district sales manager, replacing John L. Sanders (no relation), who opened the Atlanta operation for Spencer in 1950. John Sanders has resigned to accept a position with the Mississippi River Fuel Corporation, St. Louis, Mo.
Kirk Sanders is a native of South Carolina, where he attended Clemson College. He completed his education at North Carolina State College, however, graduating with a degree in textile engineering. After service with the industrial sales sections of both Mathieson and Monsanto chemical companies, Mr. Sanders joined Spencer in September, 1950, and handled the Florida sales territory for three years before his assignment to Mississippi. As southeastern district sales manager, Mr. Sanders will be in charge of the Spencer Atlanta office in the Candler Building and assume responsibility for sales of agricultural chemicals in South Carolina, Georgia, Florida and Alabama.

W. Robert McDaniel, formerly production materials supervisor, has been promoted to materials supervisor.

Donald B. Johnson, Jr. has been appointed market analyst in the plant food division's sales department. Mr. Johnson came from International's research division, where he has been a member of the technical economics staff.

Jack W. Hicks becomes manager for area III, operating from International's installation at Mason City, Iowa. Mr. Hicks was formerly district sales manager at Mason City.

John L. Sanders who has been appointed Sales Manager of the Chemical Division of Mississippi River Fuel Corporation, St. Louis, Missouri, it was announced recently by W. G. Marbury, President.
With headquarters at 407 North Eighth Street, St. Louis 1, Missouri, Mr. Sanders will handle the sale and distribution of their ammonia nitrate, anhydrous ammonia, and nitrogen solutions for the newly formed division, to be known as Mississippi River Chemical Company.
Production from their new ammonia plant at Selma, Missouri, thirty-two miles south of St. Louis on the Mississippi Rives is expected in the fall of 1955.
An agricultural graduate of the Louisiana State University, Mr. Sanders was Louisiana and Arkansas Sales Representative for the Barrett Company, a subsidiary of Allied Chemical & Dye Corporation, during the years from 1939 to 1941. He left this organization to become Sales Manager of the Fertilizer Seed & Feed Division of the P. P. Williams Company operating in Mississippi, Louisiana, and Arkansas. During 1945 and part of 1946 he served as Southern Agronomist for the Coke Oven Ammonia Research Bureau before joining the Sales Staff of Spencer Chemical Company in June of 1946. For three and one-half years he was Sales Representative in Iowa and Nebraska before being selected as their first District Sales Manager in June of 1950. Since that time he has served as Southeastern District Sales Manager for the Spencer Chemical Company with headquarters in Atlanta, Georgia.

John M. Coates, formerly sales representative in the Mason City district, succeeds Mr. Hicks as district sales manager.

* * *

Robert I. Sutter will represent **Hammond Bag & Paper** in the Ohio territory according to an announcement by **M. E. Greiner,** vice president and general manager. Mr. Sutter has been in Multiwall bag sales for 25 years and is well known to the trade throughout Ohio and the Middle West.

* * *

Spencer Chemical announces the employment in chemical research of **Dr. W. C. Francis** as staff member in organic chemistry. Dr. Francis will be assigned to the central re-

Frank R. McFarland, who has joined Miller Chemical and Fertilizer, Baltimore as an advisor to their farmer customers. He has a long record of helpfulness to agriculturalists.

search laboratory located at the company's Jayhawk Works near Pittsburg, Kansas. He joins Spencer Chemical Company after completing two years of advance study in Fluorine Chemistry at Cambridge University in England on a Fulbright scholarship.

* * *

Dave S. King has been named manager of the **Virginia Carolina** Hopkinsville sales office. He had been sales manager for **Cumberland Chemical,** serving in this capacity until he became manager of the Hopkinsville sales office for V-C.

Al C. Rutland has assumed the duties of superintendent of the Hopkinsville factory. He served as foreman of the Cumberland Chemical Company for seventeen years before becoming superintendent.

R. L. Blakey has been transferred from the Cincinnati sales office to serve as salesman for the Hopkinsville sales office. He has been with V-C since 1940.

John Stites is also a salesman for the Hopkinsville sales office. He became associated with **Cumberland Chemical** in 1946.

Chief Clerk at the Hopkinsville sales office is **Tom Gray.**

Gray was employed by Cumberland Chemical in 1950 as bookkeeper. He served in that capacity until he was named chief clerk of the V-C sales office.

* * *

H. C. Nichols, chemical engineer, experienced in odor abatement and air pollution control, has been appointed head of the engineering service section of the **Industrial Reodorants ("Alamask") Division of Rhodia, Inc.,** New York.

Creation of an engineering service section follows announcement by Rhodia of two specially designed industrial reodorants for airborne odor abatement in the manufacture of fertilizers. Developed after years of testing in laboratories and plants of the fertilizer industry, the new reodorants, "Alamask" CPM and "Alamask" AAM have been found effective in the abating odors caused by trimethylamines resulting from fish waste in the manufacture of fertilizers, and refinery sulphide odors caused by mercaptans and sulphur from spent acids in producing operations.

* * *

Harry A. Hughes, vice president of **St. Regis Sales Corporation, St. Regis Paper** sales subsidiary, is now assistant general sales manager of the multiwall packaging division. Also announced is the appointment of **Howard C. Peterson, Jr.,** vice president of St. Regis Sales, as eastern district sales manager of the multiwall packaging division. In this position, Mr. Peterson succeeds Mr. Hughes.

* * *

Fletcher L. Munger, heretofore Western sales manager for **Gilman Paper** in Chicago, becomes assistant to the vice-president in charge of sales, with headquarters at 630 Fifth Avenue, New York. He will still supervise the activities of the Chicago office until a replacement is announced. Mr. Munger's chief duties are in connection with the development and sales of chemical by-products, multiwall papers, and multiwall bags, for Gilman Paper Company and its subsidiary, **Kraft Bag Corporation.**

* * *

Raymond Bag, Middletown, Ohio, has announced the appointment of two new members to their Chicago district office sales organization: **W. Ray Raleigh,** with over 14 years' experience in the industrial packaging field, will handle Raymond sales for a portion of Chicago and the remainder of the State of Illinois. **E. H. Pyle,** who has been engaged in multiwall paper sack sales for 25 years, will also represent Raymond in a portion of Chicago and the State of Wisconsin.

Liquid Fertilizer TANKS

The Economical Answer to Fertilizer Handling Problems

Increased demand for liquid fertilizers means proper equipment for bulk handling if you and your dealers are going to meet competition and show a profit.

One kind of tank—the rubber-lined tank—has been proved most economical and dependable. Acme-Fisher has had long experience in this field, supplying leading chemical companies with standardized acid-handling equipment.

Write, wire or phone for quotation on your needs. We fabricate our own steel, save two profits on every job.

ACME FISHER

Division
BROADWAY RUBBER CORPORATION
530 East Broadway
Louisville, Ky.
WAbash 5096

Charles E. Trunkey who has been named assistant secretary of the Middle West Soil Improvement, it was announced by Zenas H. Beers, executive secretary. He will assist Mr. Beers in field work and in gathering and processing editorial and pictorial material in connection with the educational program sponsored by the Middle West Soil Improvement Committee.

K. O. Roe, agronomic sales coordinator for **Schrock Fertilizer** resigned his position, effective August 1, to enter other business.

* * *

The importance of recently-developed fertilizers in programs to keep farm production in pace with increasing population trends was described to members of the Kiwanis Club recently by **Lester O. Peterson,** manager of the **Armour Fertilizer Works,** Winona, Minn.

He pointed out that new farming techniques and materials have made it possible for one farmer today to produce as much food and fiber as five farmers did a century ago and for one man-hour of work to produce three times as much as in 1910.

Peterson said that the vast increase in the use of fertilizers during recent years has been cited as one of the major factors in the expansion of the nation's agricultural production potential.

James W. Taylor moves up to head Research, Sales Promotion and Advertising for **Kraft Bag Corporation,** 630 Fifth Avenue, New York, and St. Marys, Georgia. This new post is established to help multiwall sales attain greater objectives in highly-competitive fields.

* * *

In the recent Maine elections, **James C. Totman,** assistant treasurer of **Summers Fertilizer** and vice president of **Northern Chemical,** was reelected to his third two-year term in the Maine State Legislature. When this body convenes in January, Jim will be one of the leading candidates for Republican Floor Leader.

* * *

Ralph Douglass, Smith-Douglass, Norfolk, has been appointed to an eleven member study commission on state capital outlays by Governor Stanley of Virginia. One person from each of the ten congressional districts in Virginia was named to serve on this commission.

* * *

Roger H. Matuszak, consulting engineer technichian, has been appointed office manager of **Fertilizer Engineering & Equipment Company,** Green Bay, Wisc., consulting engineers and manufacturers of fertilizer plant machinery, it has been announced by **James E. Madigan,** president.

* * *

Howard E. Milius has become associated with **Millmaster Chemical Company,** New York, as manager of product development, it was announced October 4 by **Robert J. Milano,** president. Millmaster supplies a line of plant hormones to the agricultural industry. Mr. Milius was formerly sales manager for **Humphrey-Wilkinson, Inc.,** chemical manufacturer of North Haven, Conn.

S. M. Spencer, supervisor of textile bag sales for Bemis Bro. Bag Company, who has been appointed assistant manager of the company's St. Louis plant and sales division, effective October 1. He will be succeeded as supervisor of textile bag sales by W. J. Ray, who has been acting as his assistant. Mr. Spencer joined Bemis at St. Louis in 1937. Mr. Ray joined Bemis in 1933.

* * *

Warren B. Thompson, formerly with **E. I. du Pont de Nemours & Co.,** Wilmington, Del., has become associated with **Rhodia, Inc.,** New York, as sales representative in the Middle Atlantic states, with headquarters in Philadelphia.

In his new position, Mr. Thompson will be responsible for sales of Rhodia's Industrial Reodorant ("Alamask") Division which produces a series of reodorants for odor abatement.

* * *

Benno C. Schmidt, partner in the firm of **J. H. Whitney & Co.,** has been elected a member of the board of directors of **Freeport Sulphur,** it was announced September 30 by **Langbourne M. Williams,** president.

* * *

T. R. Moorer has been appointed manager of the bag sales division of **Fulton Bag & Cotton,** it has been announced by **Clarence Elsas,** company president. Mr. Moorer, who was engaged in chemical product sales for several years, became affiliated with Fulton in 1948.

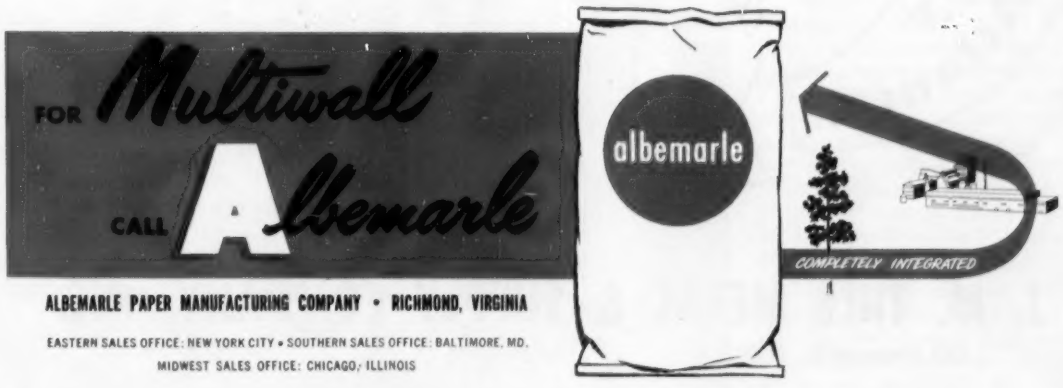
* * *

Calvin L. Dickinson, American

Meet C. E. "Charlie" Harris, secretary-treasurer of Monroe Oil & Fertilizer Co. at Monroe, Ga. A native of Walton County, Charlie joined the company 20 years ago, and has been there ever since. A member of the Monroe Lions Club, he is married and makes his home at Monroe. The Harrises have one daughter, married and also living in Monroe; last year the birth of her son turned Charlie into a proud grandfather. 2. This is H. M. Arnold, president of H. M. Arnold Fertilizer Company at Monroe, Ga. A native of Monroe, he entered the fertilizer industry 35 years ago (When he answered our question about how long he had been in the business, we commented that 35 years is a long time. Mr. Arnold replied, "Yes, the way things look so far this year, its just one year TOO long.") He resides in Monroe, where he is active in the Rotary Club and other civic organizations. The Arnolds have two children.

Every step in the production of Albemarle Multiwall Bags is Albemarle controlled. Albemarle is, in every sense, a completely integrated mill—growing its own pulp wood, milling, coloring and printing its own fine Kraft paper—pasting and sewing its own Multiwalls, plain and valved, in many plies.

When you place your order with Albemarle, it is "our baby"... all the way.



ALBEMARLE PAPER MANUFACTURING COMPANY • RICHMOND, VIRGINIA

EASTERN SALES OFFICE: NEW YORK CITY • SOUTHERN SALES OFFICE: BALTIMORE, MD.
MIDWEST SALES OFFICE: CHICAGO, ILLINOIS

Potash & Chemical advisory engineer at Trona, Calif., has been named director of engineering, it was announced by **Parker S. Dunn,** vice president in charge of production.

In his new capacity, Dickinson will direct all Trona engineering functions, including power, maintenance, construction and stores.

Dickinson joined **American Potash & Chemical** in December, 1953. Formerly he was plant manager of the organic chemicals division of **Diamond Alkali Co.** at Houston, Texas.

* * *

Robert D. Sharp, formerly Southwestern sales manager for **John Powell & Co., Inc.,** has joined **Prentiss Drug & Chemical Co., Inc.,** as assistant to **John R. Stoddard,** vice-president in charge of sales of insecticides and other agricultural chemicals. His headquarters will be in the New York office of Prentiss.

* * *

Dr. Albert W. Meyer, in charge of the **U. S. Rubber Company's** new materials department at Passaic, New Jersey, for the past three years, has been appointed to the newly-created position of director of exploratory research for **Diamond Alkali Company,** effective immediately, it was announced September 20 by **President John A. Sargent.**

* * *

Smith-Douglass changes: **J. Victor Champion** Norfolk plant manager became coordinator of raw materials and production throughout the mixed fertilizer division.

Robert V. Peabody became general traffic manager.

James C. Evans is sales manager of the Streator division.

W. A. Wilcox from fertilizer superintendent of the Norfolk plant to take up duties as construction engineer in the research & development department, with his first assignment the construction of a new pelletizing plant in Streator.

Linwood M. Hanbury returns to Norfolk from Streator, where he has been fertilizer superintendent, to become fertilizer superintendent of the Norfolk plant.

Dale C. Washburn took up new duties in Streator as fertilizer superintendent after Linwood Hanbury's transfer.

John H. (Jack) Schlosser joined the Company as corporate accountant. He was associated with the **Monsanto Chemical Co.**

Herman G. Powers became plant manager of the Norfolk factory.

Mills W. Darden was named branch manager of the Norfolk operation in the mixed fertilizer division establishing a uniform system of branch fertilizer operations.

Phillip T. Smith was named sales manager for mixed fertilizers. **Mack A. Glass** was named his assistant.

The buying of all company commodities other than materials was centralized in one office, with **J. B. Lynch** named as purchasing agent.

Vice president **J. H. Culpepper** announced that **Albert Fary** was assigned the new responsibility for sale of the company's specialty products. **J. R. (Bob) Stiffler** was named to handle advertising and public relations affairs.

Call TULL in ATLANTA when installing or repairing a

NITROGEN SOLUTION SYSTEM

Because—

WE KNOW OF NO OTHER PLACE WHERE A SIMPLIFIED PACKAGE OF CERTIFIED COMPONENT PARTS CAN BE FURNISHED FOR IMMEDIATE SHIPMENT.

Each part is guaranteed to give 100% service in the corrosive atmosphere of Nitrogen Solution.

SO WHY TAKE A CHANCE on picking up items from miscellaneous sources. Purchase parts that are matched and guaranteed by the oldest supplier of fertilizer plant fittings.

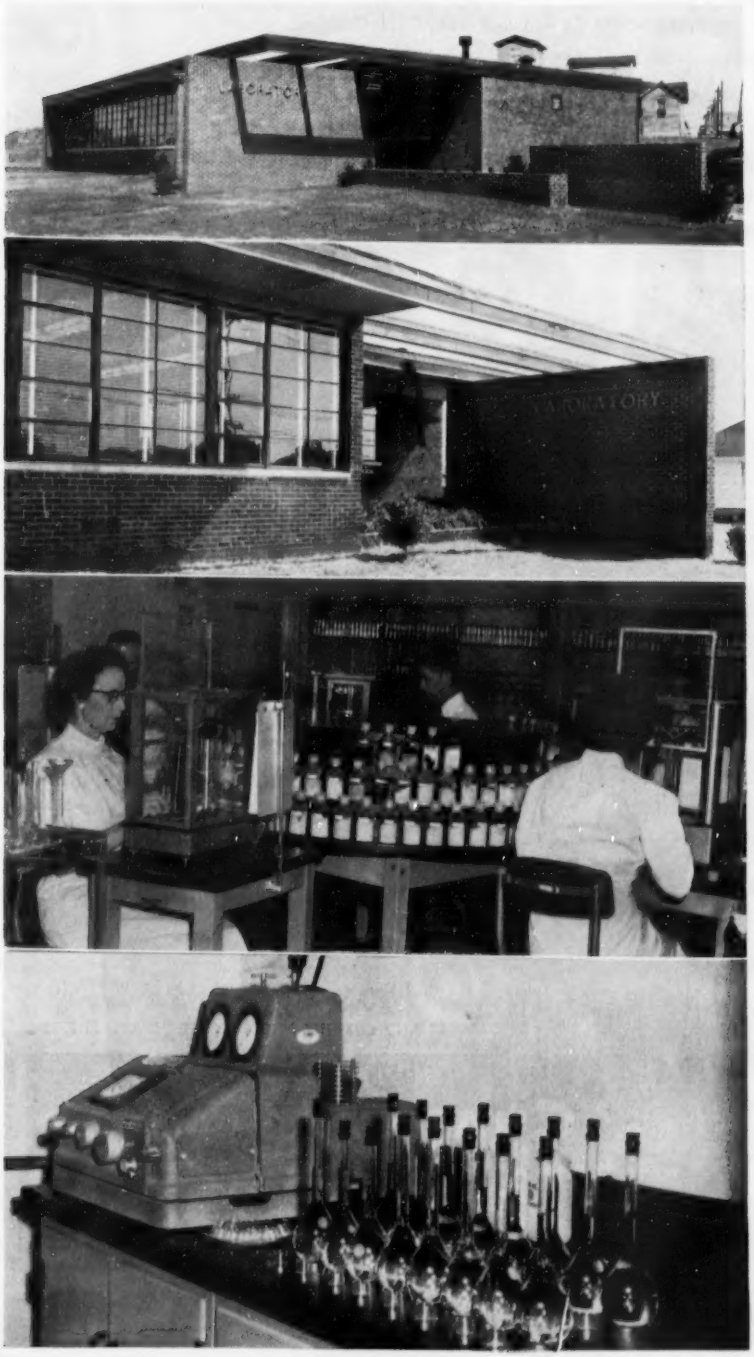
SEND FOR YOUR BOOKLET, "The Installation and Operation of a Nitrogen Solution System." to P. O. Box 4628, Atlanta 2, Ga.

J. M. TULL METAL & SUPPLY COMPANY, INC.

285 Marietta St., N.W. Alpine 3871 Atlanta 3, Ga.

IMC HOLDS OPEN HOUSE TO SHOW NEW LABORATORY

1. Exterior view of IMC's new laboratory from the drive between the street and the paved parking area. 2. Exterior view of the new faculty from the side street. 3. Five chemists are able to work with the same group of samples at one time due to the ingenious arrangement of this three-tiered revolving sample table in the balance room around which the laboratory is grouped. 4. One of the up-to-date pieces of time-saving equipment is this precision spectrophotometer for the scientific measurement of a sample potash content.



International Minerals & Chemical Corporation's Plant Food Division held "open house" at East Point, Ga. September 9 to initiate its new Analytical Control Laboratory. The modern brick building, culmination of many years planning, stands almost in the shadow of the old frame structure it replaces on the 18-acre site shared with the IMC fertilizer manufacturing plant for nearly 50 years.

The new analytical laboratory, like its predecessor, will perform control analysis for primary elements in various grades of mixed goods produced at each of IMC's 26 plant food factories. Designed to take in stride 100,000 determinations annually, the air-conditioned building was planned in such a way that all lab rooms lead from the balance room, "nerve center" of the operation. In addition to the actual laboratory-facility rooms, the 6500-sq.-ft. structure houses offices, library, mailing room, and lunch room, along with equipment and storage space.

Outstanding feature of the balance room is a big custom-built balance table where three revolving tiers allow five chemists to work with the numbered sample bottles simultaneously. Employing the principle of "Lazy Susan" multiple food-server, the arrangement was conceived by IMC Chief Chemist P. R. Archer, who worked with the architects and engineers in designing and constructing the building for the laboratory, which he heads.

Furniture and equipment inside the new control center, as modern and handsome as the exterior and landscaping surrounding it, emphasizes the changeover from manual to instrumental methods of analysis. IMC chemists are especially proud of the spectrophotometer which utilizes a measure of change in flame color to determine the potash content of a sample; this machine furnishes in 45 minutes data which required 5¼ hours by the former method.

Maurice H. Lockwood, IMC vice president for the Plant Food Division, made a special trip from the company's headquarters in Chicago to be on hand for the opening.

the multiwall bags backed by 107 years of know-how . . .

CHASE Multiwalls

Call on your "C"-Man, your Chase representative. You can't put your problems in more capable hands. You can't put your products in better bags.

Sewn valve, sewn open mouth, pasted valve, pasted open mouth

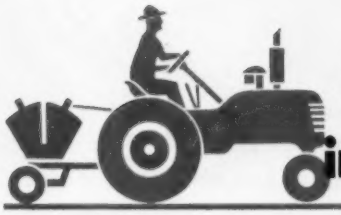
FOR SAMPLES AND CURRENT PRICES, WRITE DEPARTMENT 19-J.

SINCE 1847

CHASE BAG COMPANY

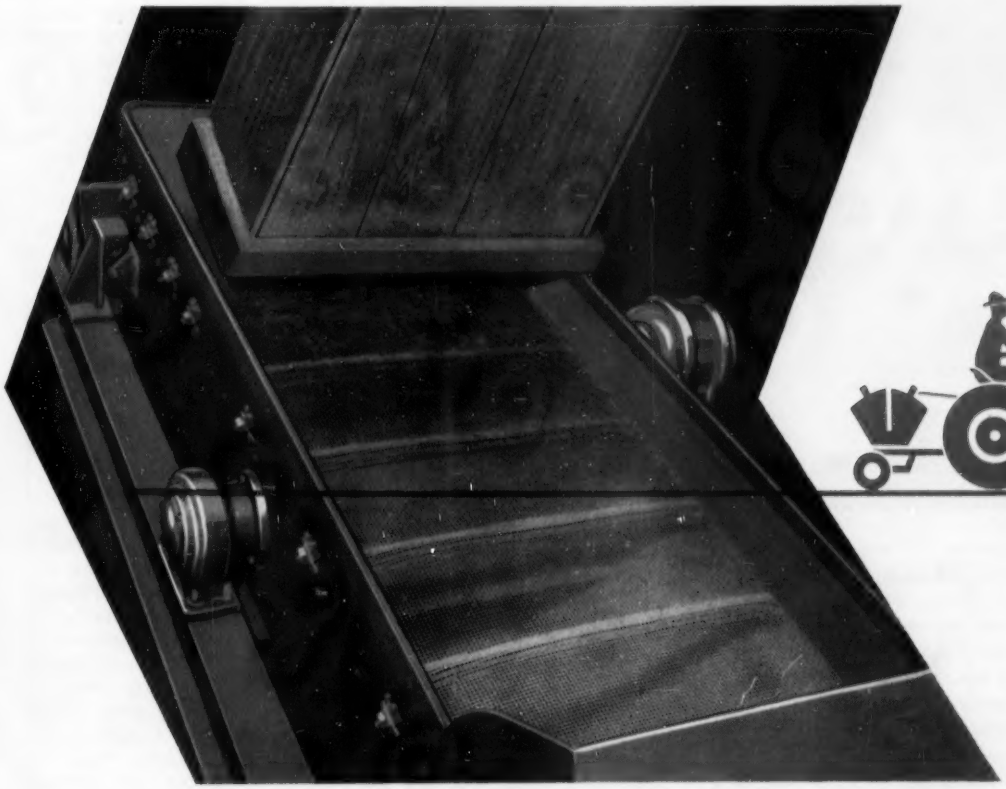
General Sales Office: 309 West Jackson Blvd., Chicago 6, Illinois

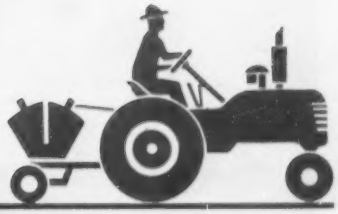
30 BRANCHES AND SALES OFFICES—STRATEGICALLY LOCATED



two SIMPLICITY gyrating screens team up to speed basing operations in fertilizer production

Two Simplicity Gyrating Screens keep operations humming at this large Southern fertilizer plant. Working as a team, they handle the output of two 14" x 7" bucket elevators. A 3' x 8' Model "LS" Simplicity Single Deck Screen handles as much as 50 tons of super phosphate per hour; and a 3' x 6' Model "C" Simplicity Single Deck Screen handles all other fertilizer ingredients at about the same rate of speed. Both screens are set at 20° and rotate with the flow of materials. There is virtually no blinding, as the screen in the photo, which has not been brushed or cleaned, shows. The splendid performance of this Simplicity team is typical of the fine job Simplicity Screens are doing throughout the fertilizer industry. They can help speed up operations and increase production in your plant, too. Write us today for complete information.





118

- Sales representatives in all parts of the U. S. A.
- FOR CANADA: Canadian Bridge Engineering Co., Ltd., Walkerville, Ontario
- FOR EXPORT: Brown and Sites, 50 Church Street, New York 7, New York

Simplicity
TRADE MARK REGISTERED

ENGINEERING COMPANY • DURAND, MICHIGAN

Among the welcoming committee were also J. R. Archer, chief chemist; W. L. "Bill" Baughcum, area manager; and O. A. Dixon, production manager. Other IMC personnel took guests in small groups on conducted tours through the new facility where they saw the different sections of the laboratory in actual operation.

Commercial Fertilizer Pictures of Distinguished IMC Visitors

1. Maurice H. Lockwood, IMC's Vice President for the Plant Food Division, came down from Chicago to help greet visitors. 2. Dr. C. A. Butt, former chief chemist with IMC who retired in 1953, after 42 years service with the company; W. L. "Bill" Baughcum, local area manager for IMC; J. R. Archer, IMC chief chemist; O. A. Dixon, Southern Production supervisor for IMC. 3. Bob Lindermann and Bill Baughcum of IMC. W. L. Stribling and C. Lee Shaw, of Willingham-Little Stone Co. 4. J. P. Livington, E. E. Leslie and Bruce Cloaninger, of the S. C. Dept. of Fertilizer Inspection and Analysis, Felton McEntyre of the Georgia State Chemist's Office. 5. Floyd Miller, J. N. Reed, W. W. Strobhert and Kirk Sanders, all with Spencer Chemical Co. 6. J. R. Banks of IMC, welcomes Bob Moncrief, Roger Reed, J. C. Oswald and Bill Dendinger of the Georgia State Chemist's laboratory before taking them on a guided tour. 7. J. R. Banks, supervisor of the new laboratories, takes P. L. Webb, J. E. Edwards, E. H. Marlin and E. G. McCollough, (all from IMC's Hartsville, S. C. office) around for a look at the facilities.

AP&C Completes Trona Laboratory

A new $150,000 dust-proof and air-conditioned control laboratory has been completed and put into operation at American Potash & Chemical Corporation's main plant at Trona, Calif.

The two story structure, measuring 60 feet long and 40 feet wide, is an all-metal windowless building constructed by Stearns-Roger Manufacturing Company of Denver, Colo. Incorporated in the equipment are the latest safety and convenience devices for use in the testing of chemicals.

Function of the control laboratory is constant testing of chemical solutions before, during and after their processing at the production plant, to maintain purity of American Potash & Chemical Corporation products. To accomplish this, the control laboratory conducts approximately 60,000 individual tests per month.

Testing begins with brine pumped from beneath the surface of dry Searles Lake, source of the company's raw materials. From this brine, 21 chemicals are produced by an extremely complex method developed throughout the years. With each step in the production process, solutions are tested at the control laboratory.

CFA Aids Research Work

The Agricultural Experiment Station, University of California, is conducting continuing research experiments in the use of commercial fertilizer with funds which are donated each year by the California Fertilizer Association. Currently in effect is a three year agreement, now in its second year, under which $4,000.00 per year is being provided by the Association as a grant-in-aid to the Department of Agronomy. The agreement stipulates that research be conducted on cotton, cereal and forage crops.

Dr. D. S. Mikkelsen, Assistant Professor of Agronomy and Assistant Agronomist in the Experiment

Station, has been in charge of this work. Recent emphasis has been on Cotton work, and results have been most rewarding. Tests are continuing this year on plots in the cotton producing areas of California. Experiment Station Leaflet #16, published last November on the subject, entitled "Cotton Fertilization", is an excellent report on the progress of this cotton research work to date, and should be in the hands of every California cotton farmer. In addition to a marked general response to nitrogen, it is of interest that phosphorus response has been obtained on certain soil types. A soil test for phosphorus has been applied on cotton soils which is 96% successful, which will be described in future publications of the Experiment Station.

The Association reports that emphasis will now be shifted from cotton to forage crops, rangelands and irrigated pasture. Work done thus far indicates that proper fertilization of these crops will result in significant increases in meat and milk produced from each acre. It is felt that this phase of the University's work, under the agreement with the Association, will contribute more complete knowledge on this important phase of California's agricultural economy.

Worthington Bulletin On Ammoniator

A bulletin is now being offered by Worthington Corporation on the corporation's new continuous ammoniator developed to satisfy the needs of the manufacturers of dry commercial fertilizer and provide more efficient ammoniation without loss of volatile gases. Worthington Corporation manufactures pumping, industrial, construction, air conditioning and refrigeration equipment.

The single-sheet bulletin is pictorially and graphically illustrated. It explains indexed operating parts illustrated by a line drawing.

Copy of bulletin may be obtained by writing to Advertising and Sales Promoton Department, Worthington Corporation, Harrison, New Jersey, specifying Bulletin R-1701-S1.

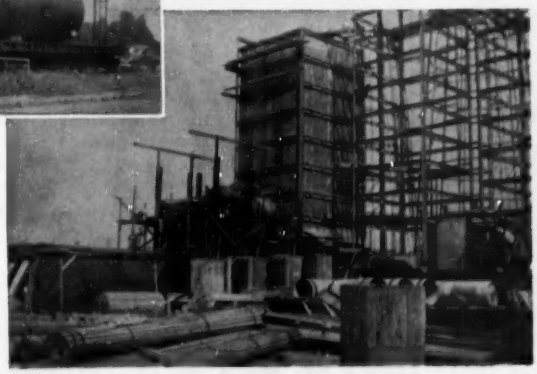
Weatherly Expands Atlanta Offices

The D. M. Weatherly Company has moved to larger offices at 830 Ponce de Leon Avenue, Atlanta, Georgia.

In announcing the move, Mr. Weatherly said, "The steady increase in the volume of our work required additional office facilities and organization. With these new offices and expanded organization we are able to handle more projects for fertilizer manufacturers."

The D. M. Weatherly Company is an organization of Process Consultants, Designers and Builders. They are specializing in chemical and fertilizer plant work.

At the present time they are handling plant expansion programs in several states in the Middle West and South. Most of these projects include granulation facilities.

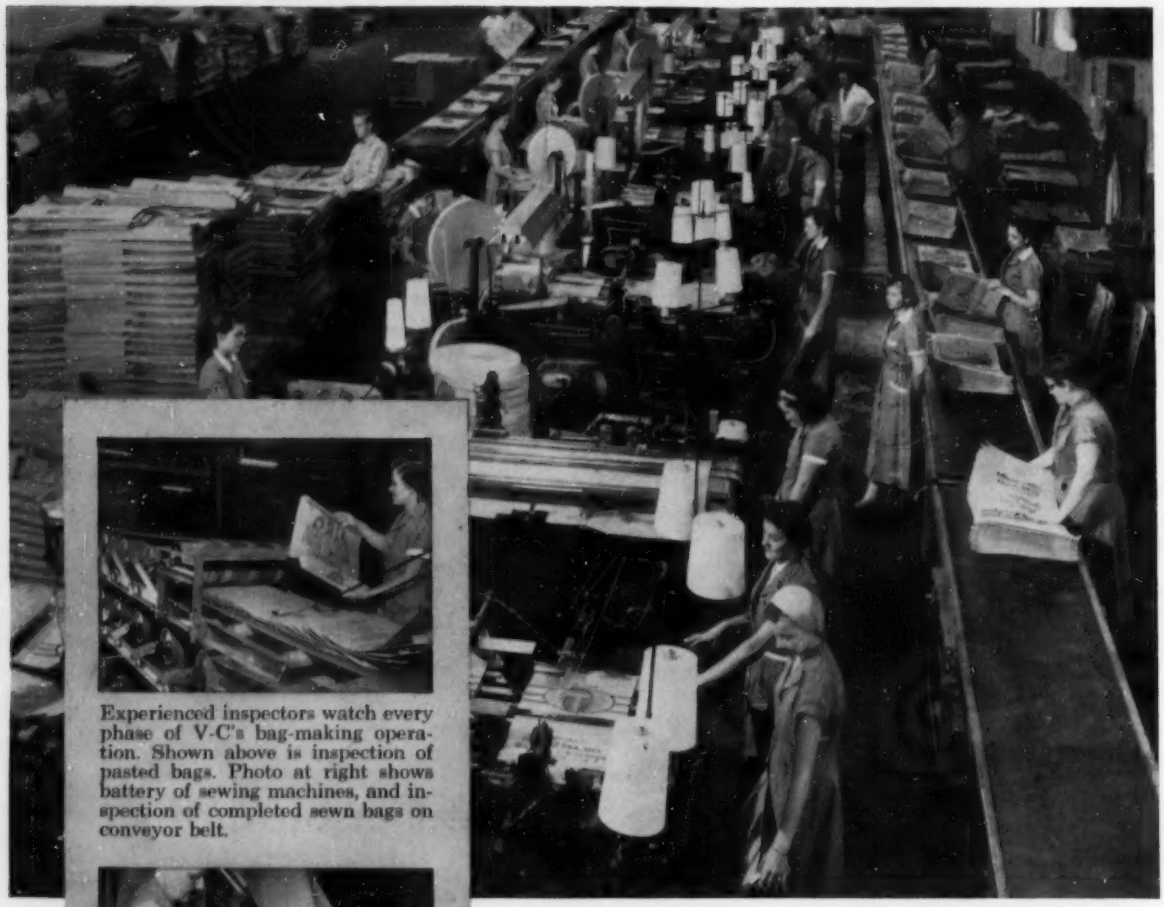


. . . Lead Lined Equipment or Construction of Complete Acid Plants

SOUTHERN LEAD BURNING COMPANY

P. O. Box 4627 ATLANTA 2, GEORGIA Tel. Walnut 2576

V-C® Experience Means Better Bags for You



Experienced inspectors watch every phase of V-C's bag-making operation. Shown above is inspection of pasted bags. Photo at right shows battery of sewing machines, and inspection of completed sewn bags on conveyor belt.

Experienced operators carefully apply sleeves in the manufacture of sewn-valve bags. Great care is necessary in this operation. An improperly inserted or aligned sleeve can cause sifting after the bag is filled.

DEPEND ON V-C's more than 50 years of bag-making experience to help solve your packaging problems. Long experience, manufacturing skill and top-grade materials, add up to better-built V-C Multiwall Bags that provide maximum protection for your product. V-C Multiwall Bags are designed to your needs, made two- to six-ply, and printed in one to four colors. Write for full information, or discuss your requirements with a V-C representative.

V-C® BAGS

MADE AS CAREFULLY AS YOUR BEST TAILORED SUIT

Virginia-Carolina Chemical Corporation

BAG DIVISION: 9th and Perry Streets, Richmond 5, Virginia

DISTRICT SALES OFFICES: Atlanta, Ga. • Wilmington, N. C. • New York, N. Y. • E. St. Louis, Ill. • Cincinnati, Ohio

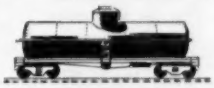
PHILLIPS OFFERS

5 FERTILIZER MATERIALS FOR HIGH ANALYSIS MIXTURES

1 AMMONIUM SULFATE

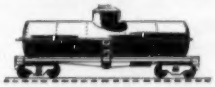
New Premium Quality Phillips *66* Ammonium Sulfate contains 21% nitrogen, 23.8% sulfur. It is *dry*-cured to remove excess moisture—prevent caking. Uniform, dust-free crystals flow freely—mix easily. Ideal for all analyses of mixed goods and for direct application. Available in bags or bulk.

2 ANHYDROUS AMMONIA



Phillips *66* Agricultural Ammonia contains 82% nitrogen. It's a convenient, economical source of nitrogen for formulation. Tank car shipments are assured to Phillips contract customers by Phillips huge production facilities in the Texas Panhandle and at Adams Terminal near Houston, Texas.

3 NITROGEN SOLUTIONS



Get more N per dollar! There are three Phillips *66* Nitrogen Solutions for use in preparation of high-analysis fertilizers and the ammoniation of superphosphate. These solutions keep handling costs low, help rapid, thorough curing.

4 AMMONIUM NITRATE

Phillips *66* Prilled Ammonium Nitrate contains 33% nitrogen. The small, coated prills or pellets resist caking . . . handle easily. Depend on Phillips *66* Prilled Ammonium Nitrate for uniform, free-flowing properties in formulations and top-notch crop response as a direct application material.

5 TRIPLE SUPERPHOSPHATE

Phillips *66* Triple Superphosphate contains 46% available phosphoric acid. Uniform, free-flowing material . . . ideal for use in formulation of high analysis fertilizers and for direct application. Available in bags or bulk.

PHILLIPS CHEMICAL COMPANY

A Subsidiary of Phillips Petroleum Company, Bartlesville, Oklahoma

Offices In:

AMARILLO, TEX.—*First Nat'l Bank Bldg.*
BARTLESVILLE, OKLA.—*Adams Bldg.*
CHICAGO, ILL.—*7 South Dearborn St.*
DENVER, COLO.—*1375 Kearney Ave.*
DES MOINES, IOWA—*606 Hubbell Bldg.*
HOUSTON, TEX.—*1020 E. Holcombe Blvd.*
INDIANAPOLIS, IND.—*1112 N. Pennsylvania St.*
KANSAS CITY, MO.—*500 West 39th St.*
MINNEAPOLIS, MINN.—*212 Sixth St. South*
NEW YORK, N. Y.—*80 Broadway*
OMAHA, NEB.—*WOW Building*
PASADENA, CALIF.—*604 Citizens Bank Bldg.*
SALT LAKE CITY, UTAH—*68 South Main*
SPOKANE, WASH.—*521 E. Sprague Ave.*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TAMPA, FLA.—*1214 South Dale Mabry*
TULSA, OKLA.—*1708 Utica Square*
WICHITA, KAN.—*501 KFH Building*

Safety . . .

THREE-YEAR PLANS OF THE FERTILIZER SAFETY SECTION

"The application of these goals can do much to lower insurance costs to the industry, reduce the fire rate and can be in a large measure responsible for continuing wider use of fertilizer throughout the United States by creating a national favorable trend in connection with accidents within the fertilizer industry."

J. Lauren Shopen*
Chairman, Public Relations

A continuing effort to reduce accident, fire, and corresponding insurance rates in the fertilizer industry by the following methods:

1. Continuous improvement in general physical layouts of plants.
   a. Better housekeeping
   b. Protective equipment
   c. Adequate guarding
   d. Improvements in flow of materials
2. Encourage improvements in fertilizer plant personnel.
   a. Pre-employment physical examinations
   b. Instruct supervisors in screening and placement of new employees
   c. Safety training programs—hourly—supervisory
3. Increased safety activity by top management in all fertilizer plants.
   a. Management must take positive attitude to stop accidents and fires.
   b. Management must pass positive safety thinking down through their organization.
4. Increased membership in the Fertilizer Safety Section.
   a. We should enroll into the Fertilizer Safety Section one-hundred additional memberships in 1955.
      1. We should affiliate all fertilizer associations not belonging to the Section.
      2. We should receive memberships from insurance companies doing business with the fertilizer industry, fertilizer machinery manufacturers, fertilizer brokers, importers, and exporters.
      3. A real effort should be made to receive memberships from all members of the APFC and NFA members who do not have individual memberships.
5. Increase interest in Sectional Fertilizer Safety Contests.
   a. All members must be encouraged to report their safety experience to the National Safety Council as more accurate statistics covering more of the industry is needed.
   b. Rules should be reviewed yearly by the Statistics and Contest Committee to be sure coverage is adequate.
6. Increase participation in state, city and national meetings.
   a. A yearly fertilizer safety meeting should be held in conjunction with the regular state safety conferences in all states having ten or more fertilizer plants.
   b. Safety meetings should be presented to the fertilizer industry on any occasion that might be presented. The Fertilizer Section stands by at all times to honor requests for speakers or entire programs for any and all meetings in the United States or Canada.
7. Increase visual aid implementation.
   a. Safety graphs
   1. Payloader operation
   b. Employee training booklets
   1. Den operation
   2. Mixing and shipping
   3. Fertilizer plant maintenance
   c. Films (30 frame color slide)
   1. Tractor shovel operation
   2. Handling bagged materials
   3. Acidulation
   4. Blasting
   5. Mixer Operations
   6. Moving Bulk pile to bagger
   d. Posters
   1. Twelve posters (new) available September 1, 1955
8. Engineering Activities.
   a. Effort should be made to complete the following safety data sheets.
   1. Ammoniating solutions
   2. Aqua ammonia
   3. Blasting
   4. Halogenated hydrocarbon insecticides
   5. Organic phosphate insecticides
   6. Mechanical handling of bulk
   7. Phosphoric acid
   8. Nitric acid
   9. Storage and handling bagged material
   10. Urea
   11. Sulphuric acid
   12. Oxides of nitrogen
   b. Operates hazard check lists
   1. Den operation
   2. Tractor shovel

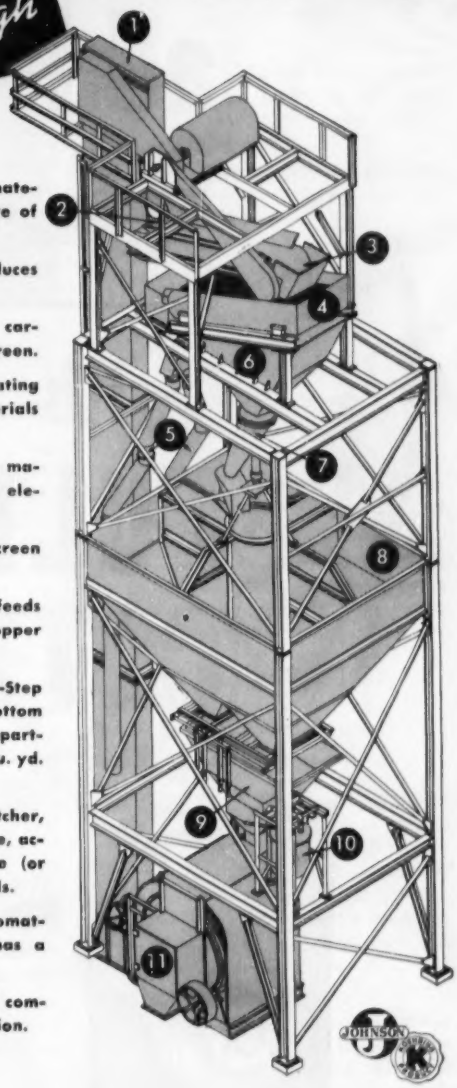
*Larry has just agreed to keep this post for another year

3. Baggers
4. Sewing machines
5. Mixers
6. Truckers
7. Blasting
8. Overhead railways

9. Encourage supplier organizations and insurance companies to call on and help the small fertilizer plants.
   a. The above mentioned are prone to by-pass the small fertilizer manufacturers because of isolation and size of the plants.
      1. They could help in providing necessary protective equipment, make plant inspections and safety recommendations.
10. Our Section should co-operate with those state departments having jurisdiction where they can and will function to better safety and fire prevention.
    a. North Carolina has an excellent safety program set up for the fertilizer industry.
11. Improve our Section Circulating Information System.
    a. All members of the Fertilizer Safety Section should co-operate by sending the following to the newsletter editor.
       1. Accident case histories
       2. New ideas—on safety
       3. Copies of bulletins, newspaper clippings pertaining to safety and any other information that might be of help to the industry.
12. Promotion of motivation study.
    a. The entire fertilizer industry should contribute to this study by: helping finance the plan and co-operating in making the study successful.
    b. The findings of this study should be passed on to the Research Committee for dissemination to the best advantage of the entire industry.
13. Establish a Research Committee.
    a. The activities of the committee should not conflict with the Engineering Committee but should be confined to the following:
       1. If new problems are pre-

take a 1-minute "tour" through

JOHNSON BLENDING PLANT



1. **Chain bucket elevator feeds material into the plant at the rate of 1000 cu. ft. per hour.**
2. **High-speed clod breaker reduces materials to required size.**
3. **Self-cleaning belt conveyor carries pulverized material to screen.**
4. **Vibrating, 4x10-foot separating screen controls size of materials fed into collecting hopper.**
5. **Reject pipes return oversize material from screen to bucket elevator for re-sizing.**
6. **Collecting hopper under screen charges pivoted distributor.**
7. **Full-revolving distributor feeds screened material from hopper into sectional storage bin.**
8. **Johnson 65 cu. yd. Step-by-Step Bin, with fast-flowing 60° bottom slopes, has four 15-yd. compartments arranged around a 5 cu. yd. central tank.**
9. **Multiple-material weigh batcher, with 5,000-lb. dial-head scale, accurately weighs up to five (or more) fine-grained materials.**
10. **For adding liquids, semi-automatic solution weigh-batcher has a capacity of 500 lbs.**
11. **Mixing unit (2-ton capacity) completes final blending operation.**

Eliminating slow, costly manual methods, Johnson fertilizer plants elevate, pulverize, screen, batch, and blend materials in one continuous cycle of operation. Owners report substantial increases in production and savings in manpower. Installation shown here is one of two Johnson plants developed to meet the special needs of a large midwestern fertilizer manufacturer. It is typical of the many sizes and types of Johnson plants available for mixing and blending all types of materials . . . manually-operated or fully automatic. You can get many profitable ideas on plants and accessories from Johnson distributor . . . or write us.

J349

Mail to: C. S. JOHNSON CO. CHAMPAIGN, ILL. (Koehring Subsidiary)

☐ Send us more data on Johnson fertilizer blending plants. ☐ Have Johnson distributor call.

NAME ..... TITLE .....

COMPANY ..... DIV. .....

STREET ..... CF

CITY ..... STATE .....

Also interested in: ☐ bulk phosphate storage plants ☐ aeration systems ☐ screw conveyors ☐ bucket elevators ☐ bins ☐ hoppers ☐ batchers ☐ clamshell buckets

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Fulton BAG & COTTON MILLS

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Phoenix • Winter Haven, Fla. • Savannah, Ga.

Royster safety records were recognized recently at the annual superintendents conference in Norfolk when special awards were presented to the three plant superintendents for their fine records. Shown E. O. Burrough, Jr. insurance department manager; J. E. Moss, Atlanta plant with 173,803 manhours without a chargeable accident; E. N. Lacy, Baltimore plant with 363,015 manhours without a lost time accident; E. A. Hall, Macon plant with 350,000 manhours with no lost time accidents . . . and still none; F. S. Moore, Royster vice-president.

sented, the Research Committee should determine the validity of the problem and then turn over to the appropriate committee and stand by to help.

2. The committee should conduct all necessary literature surveys that might be requested by the Section.

14. Establish a Fertilizer Section Fund.
    a. It would be very desirable to have a minimum fund of $3,000 established with the Council to carry out projects that pertain strictly to the fertilizer industry. These projects could not be supported by the general fund of the National Safety Council because of the narrow industry applications.
    1. Several of our members now contribute to the General National Safety Council Fund. If our members earmark these contributions to the Fertilizer Section it would go a long way toward building up this fund.
    2. Our Section funds will be allocated by the direction of the Executive Committee.
15. Development of key personnel to replace officers and staff committee of the Executive Committee.
    a. Constant search should be maintained within the Fertilizer Industry for competent people to assist in the fight against accidents and fires in our industry.
    b. Committee chairmen should farm out work to people in our industry who are capable to accept assignments.
16. Our goal for 1955 should be at least a 10% reduction in frequency rate and a 20% reduction in severity rates.
    a. This can easily be achieved if every fertilizer plant in the U.S.A. and Canada would make a honest effort toward this goal.
17. Take a look at insurance costs.
    a. All fertilizer manufacturers should assist our newly appointed Insurance Committee in all insurance matters.

1956

1. Continuation of the "1955" program should be repeated for 1956 except those items brought to a completion. The following will also be put into effect.
    a. Consider a safety training course for fertilizer plant supervision. This school could run five days, should be held in four strategically located points in the U. S. A. and should coincide with the off-peak fertilizer season. This should be a streamlined training program designed specifically for the fertilizer industry.
    1. The National Safety Council will stand by to assist in advice to make this a real success.
2. Take a better and longer look at insurance rates for our fertilizer industry.
3. Add any new items that are timely.

1957

1. Continue with all activities outlined for 1956.
2. Make new plans for the next three years.
3. If successful, repeat safety school for fertilizer plant supervision. If demand allows, have an advanced school for second year participants.
4. If our previous endeavors are successful there should be a marked decrease in insurance rates by this year.

N. C. Safety Program Shows Excellent Results

Reports from all North Carolina fertilizer plants participating in the Dept. of Labor special safety program are in and the results are as follows: Reports from some seventy plants show that the entire program is progressing very nicely and the frequency rate for the first six months of 1954 was 11.0.

This frequency rate of 11.0 for the first half of 1954 is a 40 per cent reduction over the rate for 1953, and it is the best rate for any six-month period since the drive was started. This is indicative of the fine work which the North Carolina plants are doing.

"This very substantial reduction of on-the-job injuries would not have been possible without the complete cooperation which plant officials in the industry have shown" Frank Crane Commissioner. "We appreciate this cooperation and will continue to do everything possible to work with you in making the North Carolina fertilizer plants a safer and better place to work."

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AMNICAL'S nitrogen is in approximately one-half ammonia form—resistant to leaching, slow but steady acting, gradually feeding the crop throughout the entire growing season.

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GROUND DRIVE. The most accurate spread method available. Eliminates "thick-thin" variations, permits faster spreading speeds. No gear reduction cases, transmissions, u-joints, etc. to worry with. Hydraulically operated from the truck cab.

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ENTHUSIASM FOR SAFETY*

By PAUL T. TRUITT

I am delighted to come to Norfolk today—and to talk with you about safety.

Virginia fertilizer manufacturers have long been safety conscious. Some have established perfect and near-perfect safety records. In fact, I think we may say that Virginia leads the way! And, surely, we may hope that other states will follow faithfully the course you are setting.

Safety is not new to any of this group. So, today, I shall try to talk about one certain factor which is required for any successful safety program. Also, I shall offer some suggestions on how this factor may be applied in this industry.

That factor is enthusiasm.

Enthusiasm for safety!

A well-known man once said:

"Every man is enthusiastic at times One man has enthusiasm for 30 minutes; another has it for 30 days. But—it is the man who has it for 30 years who makes a success in life."

I do not expect to spend time talking about enthusiasm for its own sake. Nor am I too much interested in general statements.

Some, however, are very impressive. Mr. Eisenhower told the President's Conference on Safety that the loss in 1953 on account of industrial accidents would have built one million 6-room houses.

If you find that shocking—as I did —you may take some comfort in the fact that, in 1953, the preliminary rate was 13.7 disabling injuries per million manhours—the lowest on record. So, you see, with all that has been said—and done—to keep down accidents and to improve safety, we have come—on the one hand —to the lowest rate for disabling injuries on record and—on the other —we must continue to absorb staggering losses annually.

Let's be more specific. The fertilizer industry's stake in safety is no small affair. According to the best figures I can get, fertilizer manufacturers charge off 3% to 4% of labor costs against accident costs, per year.

What does this mean?

The industry operates currently at about 79,000,000 manhours annually. The average wage is $1.46 per hour. The total gross labor cost is, therefore, about $115,000,000 per year. Taking an average labor-loss of 3½%, the industry is losing manhours that cost it about $4,000,000 per year. Normally, indirect costs are four times direct costs. Hence, accidents are costing this industry about 20 million dollars per year in direct costs, plus indirect costs.

Therefore, in the fertilizer industry alone, the problem is challenging. To meet it fully and successfully, a high degree of sustained—well-applied—enthusiasm for safety is required.

It is a fair question to ask:

"How must that kind of enthusiasm be applied, if we are to win the real and substantial benefits for all from the already admittedly good safety program which was started in 1951?"

First—and this has been said before—yet it is none-the-less true today—the fertilizer safety program warrants—and must have—the full, enthusiastic, and undivided support of top management.

An effective safety program costs money to develop and administer. And, the rewards justify the cost.

Top management is in a position of trust. Stockholders and employees alike look to management to safeguard assets and to promote industry welfare. It has been said that any organization is only the shadow of its head. And, certainly, unless the head of any company is safety-conscious to the extent of supporting a safety program to the fullest, there is little chance that the people down the line will act voluntarily to reduce accidents and promote safety.

With reference to this industry, there are several things I think top management can—and should—do to make the program already started more effective.

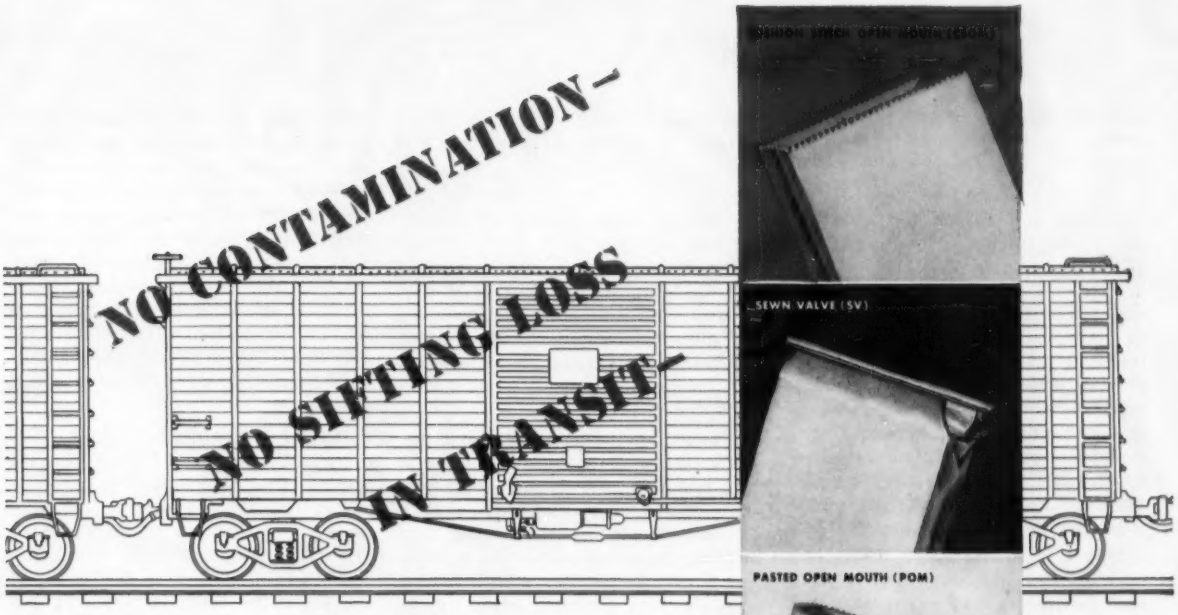
First—and most important — is support for the Fertilizer Section created about a year and a half ago in the National Safety Council. Each fertilizer manufacturer should have a direct membership in the National Safety Council and, in turn, in the Fertilizer Section.

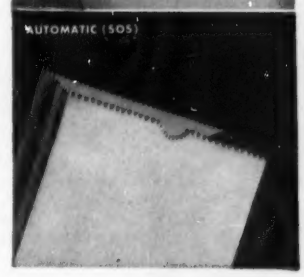
Since 1951—and currently—the American Plant Food Council and the National Fertilizer Association maintain blanket memberships in the National Safety Council, so we and the NFA may service our members, who do not belong to the National Safety Council, with safety material.

This kind of coverage—and service—can, and should, be improved by direct membership in—and active participation in—the Fertilizer Section program. The time should soon arrive when we can drop the third-party relationship and go on a direct basis. Such direct participation is very specific. It is not a one-way street from the National Safety Council to the fertilizer plant. Equally important is the flow of information, reports and ideas from the industry to the National Safety Council. To produce employee-training materials, and to measure progress, the Fertilizer Section must have information, ideas, and guidance from the industry. The only way the fertilizer section can be helpful to fertilizer manufacturers is to know where they are having trouble, and the nature and severity of that trouble. Insurance figures are of some value, but usually they are nearly two years behind actual experience.

The Fertilizer Section must have, as an absolute minimum, information both accurate and complete on the current accident and health status of the industry, as well as information on the accident and health potential of the industry. The Section has attempted to develop these data by circulating questionnaires to all manufacturers. Unfortunately, the response has not

*Extracts from a talk by the APFC President at the Virginia Safety Meeting.





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been commensurate with the gravity of the cause—nor with the opportunity for improvement.

Too many manufacturers do not complete and return the questionnaires. So far, only about one-third of the companies have cooperated—and this is not enough to give full and accurate information required to establish sound bench marks, to measure progress, and to plan employee training programs. Better support and cooperation in this area is top management's responsibility—and the best way to meet that responsibility is to join the National Safety Council and to cooperate with the Fertilizer Section 100%.

This is the first place where top management can show its enthusiasm for safety and can make that enthusiasm count.

Next—after we have registered full enthusiasm for the safety program—and after the majority of manufacturers have joined the National Safety Council and the Fertilizer Section—we need to develop better methods and materials for employee training.

Most of the thinking in the National Safety Council is oriented about highly mechanized factory operations which show a surprisingly low accident rate. Such experience cannot be validly projected over the fertilizer industry. If employee education in this business is to be successful, our methods must be based on the facts—and on our employees as they are found in fertilizer plants.

Having mentioned the need for financial support leads me to discuss the need to establish and maintain—with the National Safety Council—a permanent fund of two or three thousand dollars to provide the Fertilizer Section with working capital. The Section needs such money to finance various study and analysis projects it may wish to undertake.

As of now—the size of the Fertilizer Section—and the amount of dues it pays into the National Safety Council—is not large enough to permit the National Safety Council to finance special fertilizer safety projects. A portion of the cost of such projects will always be recovered from the sale of materials, booklets, films, posters, and so on. And—this portion of costs repaid will grow. It will grow in direct ratio to the number of new members received from this industry into the National Safety Council. However, the need for supplementary funds for some time to come is clear.

It should be remembered that dues in the National Safety Council are nominal. The Council is not a money-making organization. It is a service organization which operates on what is a relatively small income when viewed in the light of the job to be done. In terms of the National Safety Council's total members, the fertilizer industry is not large. If all fertilizer companies were direct members of the National Safety Council, the total dues received per year would be only about $30,000.

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considered in terms of savings realizable through a successful safety program!

Only 35% of dues paid by members is available for development work and overhead costs. The balance—65% of dues paid—is returned to members in the form of materials and services by the National Safety Council. Thus—nearly two-thirds of the dues paid by members of the National Safety Council are—in fact—deposits against which future purchases of materials may be charged. Owing to the specialized nature of the fertilizer business, the degree of exchangeability between materials prepared for other industries and this one is small. This means, of course, that the fertilizer industry must largely finance its own program and pay its own way, rather than being incorporated in a general over-all industrial program. Therefore, I again should like to emphasize membership — the need for all fertilizer manufacturers to join the National Safety Council—to support the Fertilizer Section—and to send their representatives to the state, regional, and national meetings. We envision the Fertilizer Section as the guardian and servant of the whole industry, rather than only of those companies now comprising its membership.

Insurance Committee, Fertilizer Section.

The recently formed Insurance Committee of the Fertilizer Section of the National Safety Council will hold its first meeting on Sunday, October 17. The meeting will be held in the LaSalle Hotel and will commence at 3 p.m. M. F. Wharton is chairman of the Insurance Committee. R. G. Diserens, vice chairman, is with Phillips Chemical Company, Bartlesville, Oklahoma. Other members of the committee are; James M. Quinn, owner, California Sun Fertilizer Company, Los Angeles, California; E. O. Burroughs, Jr., Manager, Insurance Department, F. S. Royster Guano Company, Norfolk, Virginia; E. N. Carvel, president, Valliant Fertilizer Company, Laurel, Delaware; R. L. Hugg, labor relations supervisor, International Minerals and Chemicals Corporation, Chicago, Illinois; and William E. Powell, division manager, Loss Prevention Department, Liberty Mutual Insurance Companies, Chicago, Illinois.

The committee hopes to work out a plan of securing uniform Workmen's Compensation Insurance Laws in the 49 States, and also more uniform methods of administering the Workmen's Compensation Laws in each State.

Vernon S. Gornto, general chairman, Fertilizer Section, National Safety Council, stated that the Insurance Committee would submit a full and comprehensive report at the meeting of the Executive Committee scheduled for 8 p.m. on Sunday, October 17 in the Lincoln Room of the LaSalle Hotel, Chicago, Illinois.

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ANTIBIOTICS

(Continued from page 41)

these "miracle drugs."

Since World War II, much research work on the animal nutritional value of many antibiotics has been carried on. The antibiotics primarily studied were penicillin, aureomycin, streptomycin, terramycin, and bacitracin. A decided growth stimulus and increased thriftiness were demonstrated when nonruminants (poultry and swine in particular) were fed antibiotic-reinforced feeds compared with a control group fed the same ration without the antibiotic. Further research was concerned with feeding ruminants (cattle and sheep). Here an additional "boost" was evidenced in the young just before the development of the paunch, which is dependent upon rumen bacteria for its effective functioning.

Claims of 10 to 15 percent increase in growth and weight attributable to antibiotics were made by many workers in the field of animal nutrition. This additional growth stimulus has tremendous commercial significance and is being widely accepted throughout the livestock world.

Best Response from Runt Pigs

In January, 1953, nineteen Chester White weaned pigs from the University swine herd were divided into three groups: Group 1 included seven normal pigs, averaging 49 pounds each; Group 2 was made up of six runt pigs, averaging 31 pounds each; and Group 3, six normal pigs, averaging 46 pounds each. All groups received the same ration, but Groups 2 and 3 each had terramycin (TM5) added at the rate of 2 pounds to a ton of feed. In six weeks the runts in Group 2 had outgained the other two groups and had required less feed for every pound of grain. Group 3 was the Second best to gain and made the second most efficient utilization of feed.

Other Tests Under way

Other tests in progress concern a sow milk replacer with antibiotic incorporated to permit weaning of pigs at two weeks or less, a foal feeding trial in the raising of Morgan horses, and a calf feeding experiment to test the effectiveness of an antibiotic-reinforced calf starter.

The application of antibiotics to fight or ward off disease organisms is known almost universally. But the strange power of these newly discovered substances to stimulate growth will not be understood until more evidence is brought to the fore.

OBITUARIES

Harry F. Dietz, 64, agricultural chemicals section of DuPont, September 4, at Chaddis Ford, Pennsylvania. He was an authority on pest control.

Anthony Gallegos, 45, of Valley Fertilizer, Alamosa, Colorado, killed in a plant accident.

Samuel P. Ryland, 70, director of Richmond Guano, Richmond, Virginia, August 27.

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to America's farmland

Opening this fall in Memphis, Tennessee, is a plant which will produce 72,000 tons of nitrogen annually in the form of urea and anhydrous ammonia. That's enough nitrogen to boost America's corn production by more than 50 million bushels — it's like adding three counties of rich farmland to the nation.

Corn is only one example. Actually, there will be many applications for this nitrogen: as fertilizer for other crops, as a protein source for feed supplements, and for industrial uses like the manufacture of plastics, synthetic fibers, and pharmaceuticals, and in petroleum refining.

The Memphis plant's output provides agriculture and industry a *dependable* source, backed by a world of experience.

FOR UREA AND AMMONIA LOOK TO

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This new pull-type spreader is so rugged it is guaranteed for 5 years by its maker. Baughman Mfg. Co., Jerseyville, Ill. It is named "No-Stop" because it has distinctive features that keep it running. Baughman have just issued a catalog of spreading equipment that fully describes their line. For data on the "No-Stop" write Dept. PS; for the catalog, write for bulletin A-397.

Frankl Heads Iowa Ammonia Group

B. A. Frankl, of Algona, president of Mor-Gro, Inc., has been named president of the newly formed Iowa Agricultural Ammonia Distributors Association.

There are approximately 35 distributors of anhydrous ammonia from throughout Iowa in the new association.

Other officers are Joe Rowland, Washington, first vice-president; W. E. Birdsall, Osage, second vice-president, C. E. Jirovsky, Blencoe, third vice-president, and James H. Andrews, Jefferson, secretary-treasurer.

Land Judging In Oklahoma

Land judging contests have been developed during the last 13 years by soil conservationists in Oklahoma. Three national contests have been held in Oklahoma City, with the fourth one scheduled there in 1955 on April 28, 29, and 30. Competition in these contests is open to dad, mother, brother, and sister; in fact, the divisions include the 4-H Club, FFA, men, women and girls, and college students.

Land judging is designed to give more people a better understanding of the basic fundamentals of the soil. It is rapidly becoming an outstanding teaching method because it enables the student to learn by observing and examing the soil and associating it with good soil management practices.

Another contest in pasture and range development and management has been more or less associated with the development of the land judging contest. Last year the first large scale school and contest of this type was introduced. In 1955, pasture and range judging will be added as a separate division of the national land judging contest.

A Good Man To Have Around

Probably the best man in Florida to have around when working with electricity is Russell Curry, Bartow, a member of the electric line crew of International, Bartow and Fort Meade.

Curry recently saved the life of fellow worker, E. P. Wiggins by applying artificial respiration following an accident which charged Wiggins' body with some 4160 volts. Only last fall Curry also applied

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artificial respiration in time to revive another International employee, J. B. Beasley, following severe electric shock at a mining site. For this rescue he received the coveted "President's Medal" for life saving.

The latest accident occurred at International's Achan mine when Wiggins, who was assisting in the installation of pipe at a substation, brought the pipeline into contact with a high voltage overhead wire. Power surged through the metal pipe into Wiggins' body, throwing him against a barbed wire fence. His breathing stopped.

Curry, on the spot, immediately applied artificial respiration which soon restored breathing. He was assisted in the rescue by Line Crew Foreman John Moore.

E. S. Gandrud Company recently entertained hundreds of farmers at an open house at their Owatonna, Minnesota headquarters, and unveiled this 3-hopper fertilizer spreader. They call it a mixing plant on wheels because N, P and K can be put in the three hoppers, each hopper separately metered to any desired analysis, and the farmer, or custom applicator can cover 50 to 75 acres a day. Land covered is measured by an acre counter. A fourth hopper may be attached to spread pesticides, or to sow seed.

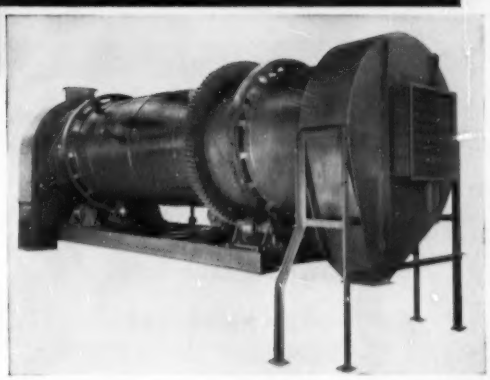
CFA Handbook In Second Edition

The Western Fertilizer Handbook, a 160 page treatise on the general subjects of soils, water, plants, and plant foods, will soon be published in the second edition, according to the California Fertilizer Association. A qualified sub-committee of the Soil Improvement Committee of the Association worked three and one half years on the text under the direction of its chairman, Earle J. Shaw of Los Angeles, prior to publication in September of 1953. 15,000 copies were printed in the first edition, and the demand from all over the civilized world resulted in a complete sell-out by May first of 1954.

The volume of prepaid orders has continued in such a steady stream that the Soil Improvement Committee has decided to publish a second edition. In order to gauge public demand, 12,000 printed brochures have been distributed to interested groups in the eleven western states. This has resulted in a big increase in the volume of orders on hand, which will be filled when the new edition is available.

The California Fertilizer Association points out that orders are being accepted at its office at 475 Huntington Drive, San Marino 9, California, when accompanied by funds to cover, at $1.00 per copy, including tax and mailing charges.

COOLERS



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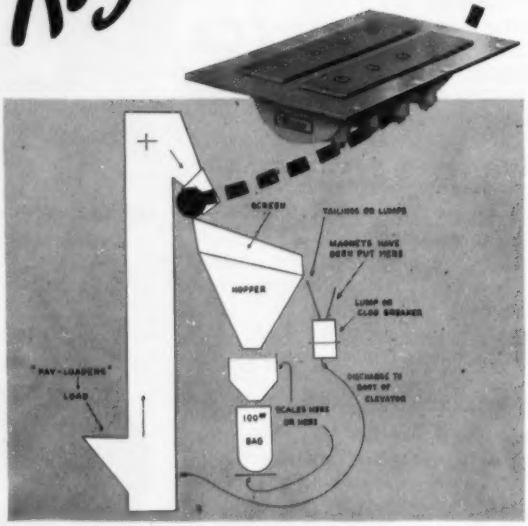

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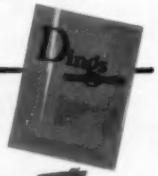

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New Technical Reference Describes Blending System

A new technical reference, offered by Richardson Scale Co., Clifton, N. J., pictures and describes the company's new high-ratio continuous blending system. In this system, small amounts of material are blended with the main stream of process material in an operation that is remotely set-up and automatically controlled.

Featured in the technical reference is a description of a process coating prills with clay. Besides listing features and outlining the operating sequence, the reference includes a schematic diagram of the prills blending installation. Pictured in the reference are the weighing equipment and the control panel comprising the system.

For copies of Technical Reference 54D, write to Richard Steensma, Richardson Scale Co., Van Houten Ave., Clifton, N. J.

Dickerson Moves To Camden, New Jersey

The Dickerson Company have moved their offices to larger quarters at 130 North Broadway, Camden 2, New Jersey. Their new telephone number is WOodlawn 6-2300. Their Philadelphia number is LOmbard 3-2288.

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OF
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AS OF OCTOBER 1, 1954

1. *Publisher, editor, etc.:*
Publisher: Walter W. Brown Publishing Co., Inc., 75 Third St., N.W.
Editor: Bruce Moran, 75 Third St., N.W.
Business Manager: V. T. Crensbaw, 75 Third St., N.W.

2. *Owner (if corporation, name of corporation, and immediately below the names of all stockholders owning 1% or more of stock):*
Walter W. Brown Publishing Co. Inc., 75 Third St., N.W.
Ernest H. Abernethy, 75 Third St., N.W.
Virginia T. Crensbaw, 75 Third St., N.W.

3. *Bondholders, mortgages, etc.:*
None.

Signed: ERNEST H. ABERNETHY, *President.*

Sworn to and subscribed before me, a Notary Public, this 24th day of September, 1954.

MARY C. LAYMAN, *Notary Public.*

My commission expires March 17, 1956.

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WANTED: Manager-Operator for Phosphate Grinding Plant to have charge of grinding mills, conveyor system, and loading of ground rock. Permanent position. In replying, give past experience, other qualifications, and age. Address reply to: E. J. Christman, Port Director, P. O. Box 1362, Lake Charles, La.

FOR SALE: New Leader Fertilizer & Lime Spreader, body 6 feet wide, 11 feet long, late model with auxiliary engine, bought new, February 4, 1952. For sale very reasonable. Farmers Cotton Oil Company, Wilson, N. C.

FOR SALE: Complete dry mixing fertilizer plant and properties, buildings and equipment only 4 years old, located in middle of fast growing west central Georgia. Business has shown good profit for years. Capacity 30 Tons per Hour. I'm 76 and want to retire. Write, phone or see A. A. Britt, Sr. Thomaston, Georgia.

WANTED: Job as fertilizer plant superintendent, dry mixing or acidulating. Experienced. Box # 9, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga.

POSITION WANTED: By capable, experienced Superintendent for acidulating or complete fertilizer plant. Have had 18 years of experience in the fertilizer industry. Box #17, c/o Commercial Fertilizer, 75 3rd St., N. W. Atlanta, Ga.

WANTED: Young graduate soil chemist for New York area for six months. Good chance to continue or advance to management later. Living quarters provided. Salary $20.00 per day. Box # 89, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga.

WANTED: Experienced superintendent to be in full charge of production of plant producing 50,000 annual tons of fertilizer in midwestern state. Includes acidulation, granulation, and shipping. Must have good educational background (perferably Chemical Engineering) and have an outstanding record of getting things done. Good opportunity for right man. Box # 14, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga

STEEL TANKS FOR SALE: Dished heads—all welded. Excellent for storing liquid fertilizer, chemicals, etc. At Grand Rapids, Mich. (8) 23,400 gal, (2) 14,100 gal. At Buffalo, N. Y. (2) 7000 gal. At Rahway, N. J. (1) 24,000 gal. At Reading, Pa. (9) 4600 gal. At Philadelphia, Pa. (3) 13,700 gal, (3) 9150 gal. Also (5) 15,000 gal. Vertical Welded Steel Mixing Tanks with Turbo Agitator. **PERRY EQUIPMENT CORP.**, 1426 N. 6th Street, Philadelphia 22, Pa.

POSITION WANTED: Aggressive man, age 41, military service completed, now connected small company apart from fertilizer industry as General Manager, but wish to return to fertilizer industry. Prefer Southern States. Connections in past with operations manufacturing liquid phosphoric acid, chamber sulfuric, normal and triple superphosphate, commercial fertilizers and detergent chemicals. Clean record of manufacturing cost, handling personnel, mechanical maintenance, formulation and general factory superintendence. Box 12, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga.

WANTED: Plant Superintendent for well equipped modern plant in Mid-West. Prefer someone with experience in granulation. State age, experience, salary desired and references. Box #16 c/o Commercial Fertilizer, 75 Third St., N.W. Atlanta, Ga.

WANTED: Job as Plant Superintendent in Georgia, not interested in other locations. Several years experience as Superintendent of Dry Mix and Acidulating Plants. Would consider job as Assistant under certain conditions. Am employed at present but desire change. Box #71, c/o Commercial Fertilizer, 75 Third St. N. W., Atlanta, Ga.

FOR SALE: Dry Mixing Fertilizer Plant. Good condition. Capacity ten thousand tons. Located in North Alabama; two railroads, Tennessee River, seven paved highways, paved farm to market roads. Well established trade. Box #15, c/o Commercial Fertilizer, 75 Third St., N. W., Atlanta, Georgia.

WANTED SALESMAN: Aggressive young man in Mid-30's for Fertilizer sales in Southwest. Personal History and experience in first letter. Expected Starting salary. Box 13, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga.

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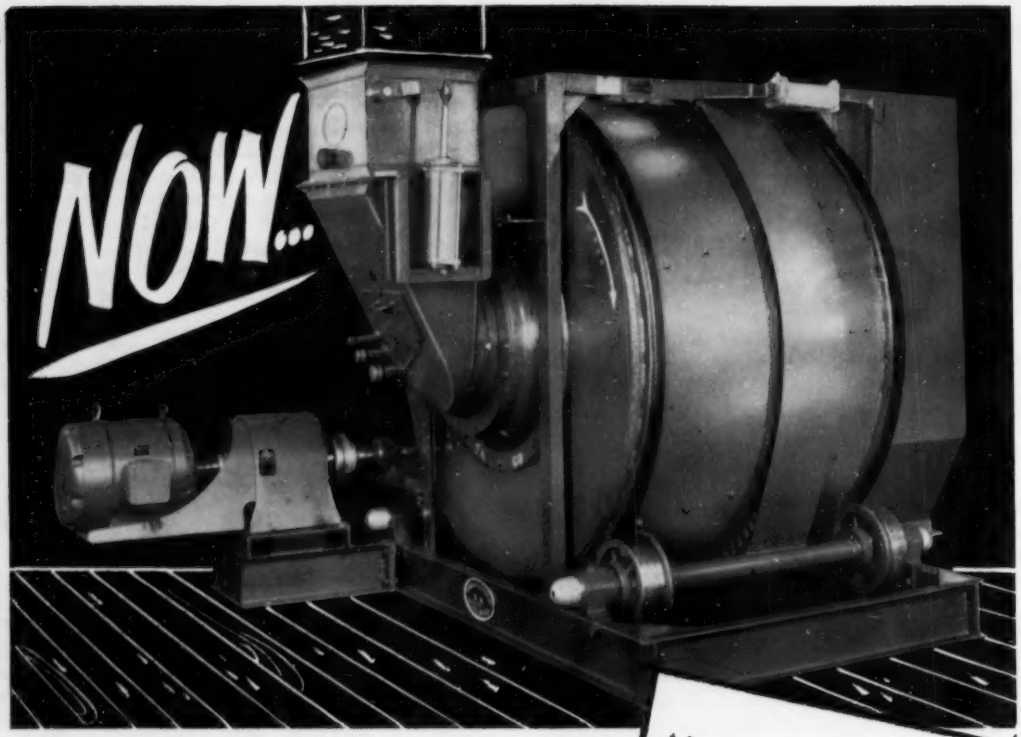

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